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THE UNIVERSITY OF ALBERTA

RUNNING AS AN ADDICTION PROCESS

by

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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH IN

PARTIAL FULFILLMENT OF THE REQUIREMENTS OF THE DEGREE OF

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FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled RUNNING AS AN ADDICTION PROCESS submitted by LARRY W. JACOBS in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Social Psychology.

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ABSTRACT

The purpose of the present study was to investigate the theory that individuals can become positively addicted to running.

In order to test this hypothesis, a triangulation of methodologies, consisting of depth interviews (n=15), survey questionnaires (n=104) and participant observation was employed.

Results of the study confirmed that runners became addicted to running and that the long-term effects of this addiction were positive in nature. The basis for the addiction process was predicated on the runner's perception that effects of running were positively effecting physical and psychological attributes of the individual.

The study also outlined the various aspects of the running sub-culture and provided an analysis of its role in the running experience. Evidence suggested that more highly committed runners were the leaders in this sub-culture, providing direction and disseminating information relative to the run and its effects, for all those involved in the running experience. The study failed to confirm the positive addiction state as the core and motivating force behind the running experience.

Concluding the investigation were implications as to the utility of the results in analyzing the present and future roles of running as a positive influence on an individual's lifestyle, as well as recommendations for further research.

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Chapter 1

INTRODUCTION

Background

During the last decade in North American society, there has been an upsurge in sport participation. Typical of this interest is the running craze, as evidenced not only by the number of individuals running on a regular basis, but also by the number of books and magazines that deal with the running sub-culture. Undoubtedly, much of this interest had its origins in an increased desire for physical fitness, but the intensity with which some individuals are pursuing this form of physical activity has led to the speculation that more complex factors are at work than mere interest in physical fitness (Henderson, 1974; Sheehan, 1978; Spino, 1976).

Sheehan (1978), for example, believed that running could lead to a reestablishment of that special relationship we once had with ourselves; a relationship that loosely translated as knowing who and what we are. Sheehan contended that society constantly bombarded us with situations that forced the adoption of roles we neither wanted nor understood. From childhood to adulthood, this process continued unabated until the individual was completely out of touch with his/her original identity. The essence of Sheehan's thesis on the liberating capacity of running was contained in the following quotation (1978:27):

> Running made me free. It rid me of concerns for the opinions of others. Dispensed me from rules and regulations imposed from out-

> side. Running let me start from scratch. It stripped off those layers of programmed activity and thinking.

Other authors also noticed these profound psychological alterations that seem to be a part of the running experience. Spino (1976:78-79) related that: "Sometimes a deep joy comes after a long beautiful run which is completed by going inside to affirm the satisfaction. An important realization for me has been that my inner being does not necessarily have to relate to my physical body."

Other authors have commented that these seemingly positive psychological alterations might be integrated into the individual's lifestyle to such a degree that the running experience took on some of the characteristics normally associated with an addiction (Fixx, 1977; Glasser, 1976; Henderson, 1974).

Glasser (1976:52) suggested that this type of addiction could be viewed in a positive manner insofar as it might yield psychological strength valuable in dealing with other aspects of one's life:

> Once they have achieved positive addiction, it is easily recognized by the fact that if they attempt to stop the activity they suffer withdrawal, some sort of pain, discomfort, anxiety or guilt that is satisfactorily relieved only by resuming the activity. Like negative addicts they will continue if they are able because, unlike negative addiction there is no reason to try to kick positive addiction - not only does it feel extremely good but it also gives strength.

Glasser's theory, while provocative, still required empirical investigation.

There have been suggestions, however, that this high commitment to physical activity was not necessarily positive, but could, in fact, introduce negative influences into the individual's lifestyle, depending on the degree to which he or she allowed this seeking out of the "daily high" to interfere with the social, psychological and physical aspects of one's well being (Morgan, 1979). It may very well have been that the "addict" had allowed his/her running behaviour to negatively influence one's social interaction behaviour. One's friends and family might suffer not only from the time allocated to running, but also from a shift in psychological perspective that has the potential to destroy social life. Sheehan's comment (1978:27) that: "Running changed my attitude about work and play. About whom I really liked and who really liked me," gave some indication of the powerful influences that runners were ascribing to their running experience. Combine those social and psychological factors with the debilitating overuse injuries that could result from the running experience and the resultant profile of the "addicted" runner becomes one of negative, not positive addiction.

Irrespective of the position taken, researchers agree that runners do become attuned to their routine of exercise and that attempts at withdrawal pose some problems. Further investigations are necessary to determine the extent to which this pursuit of exercise through running forms an addiction and to what extent this involvement can influence the runner's lifestyle. Subsequent judgements as to whether this predilection to exercise forms a positive or negative addiction can only be made in light of the intensity of the activity and the degree to which it interferes with, or contributes to, the individual's physical, social and psychological well-being.

Purpose of the Study

The central purpose of this study was to determine if running can take on the characteristics normally associated with an addiction state. That is, the running behaviour must have developed a frequency and regularity whereby the individual expresses deep concern over the possibility of not being able to continue the activity.

Associated with this primary purpose there existed the secondary purpose of investigating the stages that have led to such a high degree of physical activity. It is hoped that information gleaned from an evaluation of these stages will lend credence to a proposed conceptual model the author has devised regarding activity and enjoyment.

As a consequence of these related investigations, some assessment can be made relative to the social, physical and psychological effects of high levels of running behaviour.

Statement of the Problem

The major focus of this study was to explore the supposition that long distance runners could become positively addicted to running in the manner described by Glasser (1976). More specifically, the study, through techniques of participant observation, survey questionnaire and depth interview attempted to profile the typical "addicted" runner and the stages of involvement that led to his or her "addiction."

As a sub-problem, the study attempted to verify a conceptual model relative to intrinsically motivated physical activity. Various authors have noted a relationship between intrinsically motivated behaviour and enjoyment, but to this point, there had been little attempt at unifying their constructs into one encompassing model (Csikszentmihalyi, 1975; Glasser, 1976; Greely, 1974; Maslow, 1970).

Justification for the Study

Recently released statistics from a 1976 Canada wide survey on fitness and sport reported that 15 percent (2.6 million) of the population 14 years and over were runners, while another 65,000 reported an interest in beginning the activity that same year (Edmonton Journal, Thursday, May 8 1980, Sec. A16). The survey reported that the frequency of running ranged from a low of one to four times a month for 25 percent of the running population, to a high of at least 17 times a month for the most active 25 percent. The report concluded that the percentage of runners in the total population was increasing, but what was not known was what leads to these high levels of individual activity, especially in a sport that could be as painful and tedious as running? Certain authors have attempted to answer this question by starting from the premise that sport, in addition to its other social functions, was becoming a method for coping with the alienating aspects of a technocratic society.

> Sport may be perceived as a therapy designed to overcome the crippling contradiction resulting from role conflicts, and this therapy should mediate a higher level of performance in social activities deemed to be more important (Landry and Orban, 1978:368).

If sport is becoming a method of coping with an alienating society, to what extent does this affect the individual's psychological makeup? If sport is being perceived as a therapeutic device and not only as a reflection of the values, attitudes and superstructure of society, then we must begin to approach sport and physical activity from different perspectives.

One such perspective, clearly in need of substantiating research, was the notion that sport or physical activity can form the basis for a "positive addiction" in the manner described by Glasser (1976). In his work on "Positive Addiction," Glasser (1976) postulated that if an individual perceived an activity or sport as being capable of alleviating some type of problem on a regular basis, then that activity could possibly take on all the characteristics of an addiction for that individual. To the extent that the activity has positive carryovers into the individual's lifestyle the overall effects can correctly be referred to as a positive addiction. To the extent the individual expresses grave concern over the possibility of losing that activity, the activity itself can be spoken of as an addiction agent for that individual.

The notion of positive addiction in individuals highly attuned to an activity is receiving a great deal of publicity; however, the supposition lacks corroborating data. What are required are studies of these highly active individuals to determine if they meet the following criteria: Is there evidence that their involvement with the particular activity contributes to the quality of their lifestyle? Secondly, do these individuals express grave concern over the possibility of having to discontinue their activity for whatever reason?

Another justification for this study lay in the value of tying together various diverse fragments of theory into one model, in an attempt to explain intrinsically motivated physical activity patterns. The concepts of the peak experience (Maslow, 1970), flow (Csikszentmihalyi, 1975), positive addiction state (Glasser, 1976), and ecstacy (Greely, 1974), should be examined in light of the information gathered from the present study. Hopefully, enough evidence will be accumulated to determine the role that each of these theories play in attempting to explain each individual's perception of enjoyment in physical activity.

Although somewhat peripheral to the aims of this study, another justification for studying the running experience pertained to the stage of development that the sport of running might be entering. There was evidence to suggest that individuals moved away from participating in sports exhibiting a highly bureaucratic and hence potentially alienating structure (Gruneau and Albinson, 1976). Running may be on the edge of entering this transition stage. There is some evidence of a primitive bureaucracy building in the running world. Rules (albeit informal) for proper footwear, proper training procedures, proper breathing, proper pace, as well as methods for handling traffic, dogs and other runners, may be the first step towards the institutionalization of running. It will be interesting to observe individual reactions to running if such a bureaucracy does become established.

Regardless of whether running is beoming bureaucratized or not, there is no doubt that it has passed through the fad stage and arrived as a very popular activity for individuals in our society. At its present stage of development, it is deserving of serious study to determine the role that it plays in the lives of those individuals actively involved in it.

In summary, the justifications for this study centre on the role that running is playing for the individual in society. Firstly, data will be gathered to test the supposition that running has therapeutic value. In turn, this data should provide evidence for the claim that running can form the basis for a positive addiction in the manner described by Glasser (1976).

Secondly, data collected in this study may be helpful in integrating various notions relative to intrinsic motivation in physical activity. The data will be used to test the validity of the model proposed in the present study.

Organization of the Remainder of the Study

The remainder of the study has been divided into four chapters. Chapter 2 includes a review of the literature pertinent to the present research; in Chapter 3 there is an analysis of the methods and procedures used in the study, while Chapter 4 presents the results of the data analysis, as well as discussing its importance in light of previous research. Finally, Chapter 5 concludes the study by summarizing and discussing the implications arising from the resulting data.

Chapter 2

REVIEW OF LITERATURE

Chapter 2 is divided into two sections, each dealing with a different body of literature pertinent to the present study. The first section deals with an analysis of the history of Social Psychology and Sport Research. Included in this section will be a brief historical analysis of the contributions of the parent disciplines of Social Psychology with a view to determining the present role of Social Psychology in sport research. The second section takes a closer look at the body of research dealing with the running experience, concluding with those studies that deal directly with addiction and running.

Developmental Stages of Social Psychology

The diverse effects that play, sport and physical activity can have on human social behaviour are rapidly becoming a major area of concern within the social sciences (Ball and Loy, 1975; Edwards, 1973; Huizinga, 1955; Martens, 1975). The disciplines within the field of social science have been unable to agree on the true nature of these relationships, partly as a result of political differences, but also because of different historical approaches to the subject matter. Psychology, for example, has traditionally deemed its province to be the study of the individual, whereas sociology has been more interested in the processes of the group and society in determining individual behaviour. Obviously there exists a need for the social sciences to investigate human behaviour from both perspectives, but explanatory potential is severely limited if the resultant theory remains dichotomous in nature. If we are to underscore the useful role that social psychology can play in this regard, it becomes necessary that a historical perspective of the parent disciplines be presented for consideration. Since any realistic review of the disciplines influencing social psychology, especially as it applies to sport and play, could only be completed in numerous volumes, the author has attempted to focus only on paradigmatic structures within each discipline. Such an attempt overlooks the arguments and counter arguments that Kuhn (1962) assumed were so necessary for paradigmatic supremacy, but since not one of the sciences to be discussed can be considered to be under the influence of a single paradigm, this approach was deemed more appropriate (Harre and Secord, 1972; Ritzer, 1975).

Those disciplines which appear to have influenced social psychology to the greatest extent are physiology, anthropology, philosophy, psychology, and sociology (Martens, 1975:5). However, since physiology and anthropology have made their influence felt more in parallel studies of physical activity, only the disciplines of philosophy, psychology and sociology will be discussed here. Of interest to this paper are the established procedures for research methodology that have prevailed and continue to prevail in the disciplines mentioned. Only then can we appreciate how the fledgling study of sport in its social behaviour context received its direction and impetus.

Contributions of Philosophy

Philosophy has always been under criticism for its failure to support its subjective speculations with any empirical analysis. Philosophers have traditionally allowed themselves the freedom to roam the world of ideas unencumbered by any ties to the real world.[1]

Aware of this criticism, many philosophers have tried to explain their role as being the servant at the frontiers of knowledge, pushing back our ignorance, as it were, so that more empirically-oriented individuals might have new directions for their research. Will Durant (1969:51) highlighted this point by suggesting that "philosophy is attuned to synthetic interpretation while science is more interested in analytic description." Simply stated, Durant's theory was that philosophy should be free to synthesize theories and constructs regarding human behaviour devoid of any commitment to empirical analysis. Be that as it may, philosophy has not been able to keep its subjective speculations free from structure, especially structure of a paradigmatic nature.

Idealism, more accurately referred to as ideaism, holds that what is most important to man are his ideas, thoughts and attitudes. Tracing its historical roots to Plato and Socrates, idealism has always emphasized the freedom of self-determination as people search for ever richer experiences. Advocates of this branch of philosophy were cognizant, however, of the fact that humans are social animals and consequently emphasized that self-determination must take place in a framework of social concern. Idealists with their view that things existing in reality are only paler imitations of the perfect model, view these attempts to understand the world through human senses as somewhat primitive when compared with the perfect world as conceptualized in the world of ideas. The dualistic concept of mind and body traces its origin to idealistic thought where the body was capable of serving the mind but incapable of expressing or receiving input from the ultimate reality. The idealists will accept knowledge gleaned from science and research, however, they stipulate that it is based on man-made assumptions and hypotheses, hence it will only serve him or her as an instrument for understanding a world that is the demonstrated work of a supreme force.

---

[1] Obviously at this stage one could enter into a discussion of the essence of reality or what is to be considered scientific, but since the purpose of this overview was merely to highlight the approaches taken within each branch of philosophy, traditional subject matter was excluded.

While idealists would downplay the value of the human experience, realists would maintain that was the only way we had of knowing about the world around us. In an attempt to undermine the influence of idealistic thought, realists have maintained that a physical world exists independent of our minds, and as such, is subject to the scrutiny of empirical investigation. The notion that this physical world was subject to certain inexorable physical laws soon led to speculation that humankind might be governed by similar laws in their individual conduct with other people. If these laws could be discovered, it was assumed they would serve as guides for a person's social and individual behaviour (Harper, Miller, Park and Davis, 1973). For many philosophers, realism held more promise for solving human problems than idealism.

At the very least, realism would accept that the consequences of human social behaviour could be investigated; whereas for the idealist, it remained somewhat clouded by its supra-natural origins.

Pragmatism is not so much a philosophy of determining a person's relationship to our world as it is a method for determining the meaning of ideas. Noted for their practicality, pragmatists hold to the view that truth arises out of experimental verification and becomes important to people only through utilization. Dewey (1963) labelled this concept instrumentalism; later, philosophers would simply assert that truth was to be verified on the basis of what worked. Obviously pragmatists felt little constraint from idealistic notions in their treatment of truth. What they did share with earlier philosophies was the realistic notion that a physical world existed separate from our minds; however, the extent to which they engage the separate reality marked a departure point for the pragmatists. If there was an unknowable reality it was of little consequence in the practical destiny of humans. So strong was this belief in the practical scientific method that most pragmatists viewed it as the logical arbiter of human values and ethics (Harper _et al._, 1977:181).

Existentialists advocated an entirely different emphasis; instead of teaching people to rely on science and technology, they attempted to teach people to live meaningful lives while under the shadow of a technocratic society. Realizing that a high degree of interpersonal alienation accompanied a modern technological society, existentialists tried to motivate the individual into realizing that humans are responsible for their own "existence." The thrust as described by Maslow (1968) and May (1961) was to allow the individual to view social and individual behaviour through the combined eyes of psychology and philosophy. Most existentialists, however, objected to the term philosophy in describing their perception of humans and their environment. More important to them was that people recognize four stages in their pursuit of self-realization. The first stage was a realization that they must encounter in their existence the turmoil that comprised life; secondly individuals must realize they would become unique identities only by shaping and defining what their own existences were to be; thirdly that men and women must assert their right for absolute freedom in all matters by actively choosing for themselves. The final stage was the recognition of alternative actions, the realization that they could be any type of creatures they chose to be (Harper _et al_., 1977: 207-208).

Phenomenology is not usually regarded as a branch of philosophy but as a way or method that one can utilize to understand the world around oneself. Unlike pragmatism, idealism, realism or existentialism, phenomenology has no ordered collection of ideas to which one can subscribe, or a system of thought that would encompass all things.

If one were to attempt to utilize phenomenology, one must be fully aware of the area to be investigated. The researcher must look to examine the fundamentals or basics of the situation not unlike the archaeologist searching deeper into the remains of ancient civilizations to better understand the complexities of their culture. In a similar manner, the phenomenologist looks to the core of the experience, situation or "phenomenon" in order to describe what is seen, or what is the essence of that reality. The researcher attempts to use his/her subjective awareness to report the feel of things and what differentiate them without attempting to place a value judgement on the experience (Harper _et_ _al._, 1973).

This discussion in philosophy foreshadows the state of affairs we will encounter throughout the social sciences, namely, the eclectic nature of paradigm utilization. Idealism stressed the unobservables of ultimate reality and the pre-eminence of the mind in dealing with that reality. Realism and pragmatism signalled a counter force in that the observables of human and natural phenomenon were considered paramount. Finally, existentialist thought pointed the way to combining the different points of view so that an individual could be considered in our environment as an active agent capable of directing his or her own destiny.

Contribution of Psychology

By the middle of the nineteenth century, philosophical inquiry had raised a number of questions regarding the perceived essence of life and its subsequent effect on human behaviour. Dealing with these questions became the province of psychology, an emergent discipline founded largely as a result of the work of three men: Lloyd Morgan, G. E. Miller and Herman Ebbinghaus (1969:28). Each man played a different role, but their efforts culminated in a common goal; the final delineation of psychology as a science in its own right.

Morgan developed what is generally referred to as the law of parsimony, that is, given several hypotheses, the simplest one, the one making the fewest _a_ _priori_ assumptions is scientifically the most reliable. Miller's research allowed him to conclude that contiquity only allowed for association in the eyes of the perceiver. Ebbinghaus is remembered for his ability to design laboratory situations that allowed the experimenter careful control and management of the dependent and independent variables. His work on nonsense syllables and memory retention is regarded by many as a classic study in psychology.

Structuralism was generally regarded as the first wave of thought to heavily influence the new field of psychology (Marx and Hillix, 1963). Although the time span under which it flourished was short, its influence had far reaching effects. Firstly, it gave psychology a strong scientific basis that clearly delineated it from philosophy; secondly, it advocated the introspective method as necessary for a complete study of psychology; and finally, it provided a very orthodox background against which later theories could organize their tenets (Marx and Hillix, 1963:113).

Opposition to the structuralists was not long in coming, as the functionalists were the first group to take issue with the oppressive theory that structuralists purported. Instead of attempting to atomize behaviour into its component parts or "structures," the functionalists believed behaviour was total or a "function" of the individual's perception. There was great disagreement on this issue. For structuralists, the environment and the perception of that environment were the same, for the functionalists the element of illusion stood between the environmental reality and the individual's perception of that reality.

The major criticism of the functionalists was that they appeared as a school of thought dedicated to opposing structuralists. As a consequence, the influence of the two schools declined together, opening the way for the theories of behaviourism, psychoanalysis and gestaltism.

The pragmatic approach to human behaviour reached its highest development under the auspices of behaviourism. Named by its founder, J. B. Watson, behaviourism was by the far the most influential and controversial of all the schools in psychology. Drawing heavily from lab experiments with animals, behavioural psychologists attempted to objectively quantify behaviour in terms of the relative powers of the stimulus and perceived reinforcer. The obvious problem in generalizing from animal studies to human behaviour was the degree to which each was capable of defining the environment (Harre and Secord, 1972:36). While animals displayed a high degree of response to a given stimulus, humans first interacted with the stimulus, attempting to decipher its "correct" meaning before responding. Behaviouristic experimentation could highlight certain response patterns that humans were capable of, but to make the assertion that humans were limited to those particular response patterns was of little use in explaining our social behaviour (Neel, 1969:175).

While behaviourists attached little significance to subjective interpretation of the environment, psychoanalysis rested much of its theory upon it. Developed at approximately the same time as behaviourism, psychoanalysis was technically not a paradigm structure in psychology at all, but more a sub-discipline of medical theory. Typically, today's psychiatrist is trained in medical school before entering into psychiatric theory of mental disorders. Why a subjective study of mental illness was attached to the highly objective science of physical illness was probably due in most part to the man credited with developing psychoanalysis, Sigmund Freud. Early in his medical career, Freud realized that many of his mental patients could alleviate their symptoms through a recollection of repressed memories. To aid in this recollection process, Freud utilized the techniques of hypnosis, free association and dream analysis, gradually evolving them into tools for the treatment of mental disorders. In its original form, Freud envisioned psychoanalysis as having a biological as well as a psychological base; however, many of the biological assumptions have fallen into scientific disrepute (Neel, 1969:206).

Much of the criticism aimed at psychoanalysis stems from its impervious nature to objective study. For example, how does a researcher deal with a theory that predicts a child must hate his/her father when the child gives no evidence of that hate? To the psychiatrist the child has indulged in reaction formation - turning the hate into love. To the empiricist researcher, it is frustrating to try to determine whether the child loved the parent in the first place or is merely turning the hate to love.

Later psychoanalytic theories, such as those devised by Adler and Jung (1969) have attempted to clarify certain aspects of Freudian theory by expanding their perspective to include the behaviour of socialized adults. While introducing slightly more flexibility into the original theories, the same criticisms of psychoanalytic dogmatism still apply.

While psychoanalytic theory was concerned with emotional aberration, gestalt psychology concerned itself with the whole or "gestalt" of human behaviour. To those scholars, atomizing any facet of human behaviour showed a blatant misunderstanding of how people dealt with the environment. To this end, gestaltists addressed themselves to discovering the underlying foundations of perceptual organization. They amassed strong evidence in support of their theory from research done on perceptual illusion. It was possible, by contrasting colour combinations, to have individuals perceive red, blue or gray, depending on illumination and background variation. This contention, that people acted on what they perceived, rather than what actually existed, presented some rather difficult times for those still clinging to structuralism and those just beginning to endorse behaviourism. Behaviourists, especially, came under fire from gestaltists who accused them of ignoring essential components occurring in the organism between the initial stimulus and the occurrence of a response pattern.'

In an effort to understand the inner motivations that defined the environment, gestaltists relied heavily on the technique of introspection. They were careful, however, to have the subject report on the meaning the experience had for him/her, as well as its subjective feeling.

Gestalt psychology has been criticized for attempting to evaluate the whole sensory experience, which was clearly too large a unit to research definitively. Obviously the loudest criticism came from the behaviourists, who no doubt felt most threatened by gestaltists. It was somewhat unwarranted as a valid criticism by the fact that gestaltists could accept an evaluation of a single experience as long as the total organism was not evaluated on the basis of a single experience.

Psychology has since taken new directions, but the impetus for recent research was still closely allied to the paradigms just discussed. Neo-Freudian, neo-behaviourists, and field theorists have not constructed new paradigms as much as they have redirected the old ones. In this sense they have not been discussed, not that their contributions have not been valuable, only that they were doing their research inside of existing frameworks rather than devising newer ones. As a science, psychology had made little attempt to coordinate the various hypothetical structures existing within it. The consequences of such lack of harmony were obvious, in that each piece of research must be analyzed as to the particular paradigm within which it was conducted. In some instances, this can be useful for providing the widest possible perspective on human behaviour. On the negative side, much of what has been done could be interpreted politically as an attempt to further the influence of a particular paradigm, and as such, must be considered carefully as to its utility.

Contribution of Sociology

Psychology was not unique in terms of tolerating diverse paradigm utilization in its research. Lodahl and Gordon (1972) investigated the paradigmatic status of several disciplines and found sociology to be rated the lowest in terms of paradigm development. Ritzer (1975) in a subsequent analysis of paradigms in sociology, interpreted these and other findings to mean that no paradigm had or was likely to achieve pre-eminence in sociological research. His review of the major paradigms was noteworthy in that it underscored the directions taken in sociology as a direct consequence of how sociologists interpreted their subject matter. To Ritzer (1975), those interpretations were basically from three schools of thought; the social factists, social definitionists, and the social behaviourists.

The earliest of the three schools, the social factists, grew out of the pioneering work of Emile Durkheim (1964) who felt it politically expedient to isolate sociology as far from psychology and philosophy as possible. In order to accomplish this isolation, Durkheim developed the concept of treating all social behaviour as if it were a social fact - that was a reality apart from the individual or individuals generating it. In this manner, Durkheim was successful in combating the influence of the early psychologists (structuralists) who advocated introspection in dealing with human response. Now that behaviour was divorced, at least for purposes of study, from the individual, it could be empirically studied in the new province of sociology. Durkheim further defended his position by asserting that psychological facts were inherited and hence suitable to introspection, while social facts existed outside of the individual and were only properly studied through empiricism. Gradually, proponents of social factism came to believe that social facts could not only be treated as real things but be accepted as real things. The impact of this transition can still be felt today when we refer, for example, to the institutions of sport, marriage and politics as if they were real entities separate from the people involved in them.

In their approach to research, social factists relied heavily on empirical data gleaned through questionnaires and surveys. An interesting criticism of social factism was the assertion that since the respondent dealt with each question on a subjective basis, he/she was, in essence, defining what was the social fact, and ultimately, it became an individual perception instead of an objective reality.

This assertion, that the individual actively defined his/her environment and his/her role in it, laid the foundation for the school of "social definition." Max Weber (1947), generally acknowledged as the earliest proponent of a social definition concept of social behaviour, advocated viewing social reality as an extension of the individuals involved in building and defining it. Since man/woman defines his/her sensory input in a manner unique to himself/herself, it was difficult to quantitatively formulate universal laws of behaviour. As a consequence, individual operant definitions were based on behaviour observation and deductive analysis. Since this methodology could have been interpreted as a behaviouristic approach, social definitionists like Mead (1934) pointed out that language and its symbolic interpretation played a key role in shaping stimulus response. The fact that sociology was coexisting very close to psychology at that late date only served to highlight the fact that a more meaningful interpretation of man/woman in a social context was only provided through an overlap of both sciences (Ritzer, 1975:97).

Social behaviourists viewed this inner core of man/woman, the part that defined and interacted with the environment, as a mystical concept which told little if anything of an individual's social behaviour (Skinner, 1971). If we want to understand human social behaviour, we must study behaviour and the contingencies of its reinforcement, not mediating concepts such as ideas, feelings or attitudes. While social behaviourists maintained they were interested in the interaction process, in actuality they conceived of human response as determined by the nature, not perception, of the external stimuli. Their emphasis rested squarely on the environment, rather than on human perception of the environment as it had for the social definitionist. This should not be misinterpreted to mean that social behaviourism was closely akin to social factism. While social factism perceived a person as influenced by norms, values and societal structures, social behaviourism was more interested in the reinforcing power those institutions had for the individual.

Summary

To this point, the author has attempted to outline the paradigmatic influences that have contributed to theory development in each of the social sciences discussed. Figure 1, though only a framework, provides some idea of the congruities existing in each of the sciences.

Reading the continuum horizontally in Figure 1 delineates the relative emphasis each paradigm assigns to a particular data base as well as the favoured methodological procedure. For example, those paradigms that emphasize unobservable or mental behaviour in their analysis of an individual's social behaviour, whether they be idealists in philosophy, gestaltists in psychology or social definitionists in sociology, all tend towards introspective techniques that focus on accumulation of highly subjective data. On the other end of the continuum are those paradigms that emphasize observable behaviour (pragmatists, psychological behaviourists, or social behaviourists) and more objective techniques in their research methods. Hopefully the discussion and the diagram (Figure 1) will serve as an historical

	UNOBSERVABLE BEHAVIOUR Investigated primarily through introspective techniques				OBSERVABLE BEHAVIOUR Investigated primarily through objective empiricism
Philosophy	Idealists	Existentialists		Realists	Pragmatists
Psychology	Gestaltists Structuralists	Psychoanalysts	Functionalists		Behaviourists
Sociology	Social Definitionists			Social Factists	Social Behaviourists

Figure 1. A conceptual model of the paradigmatic influences contributing to theory development in philosophy, psychology, and sociology.

backdrop against which an understanding of the role of social psychology as a science in its own right will emerge. Of equal importance is that sport and play, as unique areas of a person's social interaction, will be more fully understood as a consequence of the social psychological approach to human behaviour.

Present Role of Social Psychology

In light of the recent entry made by Social Psychology into the field of human behavioural research, it was understandable that some disagreement would occur as to the influence each parent field should exert on its development. Harre and Secord (1972) attempted to reconcile the different factions by suggesting that each science contained inherent weaknesses and strengths helpful to the development of social psychology (1972:2):

> In our view an adequate Social Psychology can be developed only as a cooperative enterprise between psychologists, philosophers and sociologists. No one of these groups seems able to be successful alone. Psychologists have often been concerned with too narrow a conception of social action, and have been severely handicapped by conceptual naivete. Philosophers have not lacked conceptual sophistication but have too often been ignorant of social and psychological facts, while sociologists, despite great breadth of conception, have been unable to develop adequate theories of individual and social action, and have suffered with psychologists, from conceptual naivete.

Regardless of these limitations, the dominant view among social psychologists was to view social psychology as a sub-discipline of empirical psychology. For example, McGrath (1964:1) stated that "social psychology is the scientific study of human behaviour as influenced by the presence, behaviour and products of other human beings, individually and collectively, past, present and future." Martens (1975:6) suggested that "social psychology is concerned with the study of human behaviour in relation to a person's social environment and the remaining field of psychology is concerned with the study of human behaviour in relation to a person's physical environment."

Each of the authors highlighted important points in his conception of social psychology. McGrath contended that it was a scientific study, heavily dependent on empirical observation, while Martens contended that social psychology was within the province of psychology. It was evident that both viewed social psychology as a study of observable forms of behaviour in a manner closely akin to the social behaviourists (Figure 1).

It appeared that the same statement could be made of social psychology that was earlier made of sociology; that is, divergent opinions within social psychology could be seen as a direct consequence of how its practitioners interpreted their subject matter. Social psychologists who tended to emphasize the individual against a background of social interaction aligned themselves more to the psychological end of the continuum. Those who perceived the process of social definition and interaction influencing the behaviour of the individual to a greater degree, aligned themselves toward the sociological end of the continuum. This is illustrated in Figure 2.

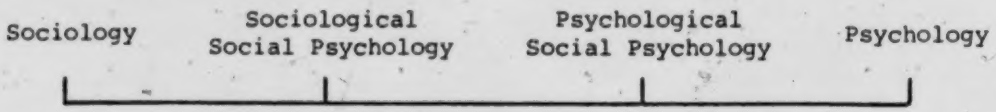
Sociology
Sociological Social Psychology
Psychological Social Psychology
Psychology

Figure 2. The dichotomous role of social psychology in relation to the parent disciplines of sociology and psychology.

At the heart of the matter was the researchers' propensity to generate highly objective empirical data or to rely on the subjective interpretations of the individuals themselves. In essence, the style of research dictated to the scientist the interpretations he/she could make relevant to his/her data. Martens (1975:4) stated: "the method of social psychology is that of modern psychology as an empirical science." This assertion seemed to place him closer to the empiricists in his interpretations of human social behaviour.

As an alternate viewpoint Harre and Secord (1972:9), in their analysis of the methodology of social psychology, suggested:

> At the heart of the explanation of social behavior is the identification of the meanings that underline it. Part of the approach to discovering them involves the obtaining of accounts - the actor's own statements about why he performed the acts in question, what social meanings he gave to the actions of himself and others. These must be collected and analysed, often leading to the discovery of the rules that underlie the behaviour.

This emphasis, while still on the individual, was more concerned with how he/she interpreted the social interaction. The difference between the two schools of thought was highlighted in their approaches to methodology. Sociological social psychologists stated that the purpose of social psychology was to discover how the individual defined and interpreted the social stimulus.

Psychological social psychologists were concerned primarily with the resultant behaviour. So, in one case, the individual could explain and discuss the underlying rules of his/her behaviour; in the other, it was interpreted for him/her, based on a quantitative assessment of his/her behaviour patterns.

Role of Social Psychology in the Present Study

Studies of the running experience posed some problems for a strict psychological or sociological approach. Trait psychology, with an emphasis on the stable personality traits an individual displayed, tended to downplay both the sociological influences present in a given situation as well as the alterations in an individual's self-perception as a result of those influences. Typical trait psychological studies of running behaviour attempted to profile the variables of the runner's personality on the assumption that those personality variables predetermined the individual's entry into the sport. An even greater weakness of these types of studies lay in the tendency to discount the length of time the runner had been involved with running; his/her reasons for beginning and continuing his/her running behaviour as well as his/her interpretation of the physical changes occurring as a result of the running behaviour. For example, studies (to be discussed in detail later) have shown that depression and anxiety were diminished as a result of the running experience. Obviously a change in an individual's level of anxiety or depression would have serious repercussions in subsequent perceptions of self, running and society. Ignoring this transition phase would reduce the utility of any data seeking to interpret running behaviour. It was important in the present study to select a methodological style capable of determining how the individual moved from one psychological state to another through the process of running. This involved not only determining which factors were changing relative to the running experience, but how the individual was interpreting these changes.

Tools from sociology were limited in their explanation of running behaviour because of their traditional emphasis on the group process. Early running behaviour was, no doubt, a consequence of some of the following processes. The individual might begin to feel pressure of some sort from his/her recreational or working peers or receive comments in regard to his/her overweight condition. His/her smoking or drinking habits, the loss of a tennis or golf game, all may have an effect in terms of goading the individual towards some form of exercise (Fixx, 1977; Henderson, 1974; Sheehan, 1978). Runners, however, reported a shift in motivation after this initial push towards activity. No longer did they run for the strict benefits of cardiovascular fitness or weight control. Typically, they reported that the running experience became important in and of itself, changing their perception of themselves, their ideas and the society within which they lived.

These transition stages in the individual's perception obviously strained the paradigmatic structure of both psychology and sociology. What was required was an understanding of how the individual perceived himself/herself and his/her environmental situation; how and why he/she went about changing these and subsequently how he/she reacted to those changes. Only then could we begin to appreciate the relative importance of running in the individual's lifestyle.

Social psychology has the potential to deal with these types of research problems. It recognizes that psychological and personality components are flexible and subject to the individual's perception of their effectiveness in various environmental situations. Fixed within certain time frames, personality components could be significantly altered as a result of alterations in the individual's environment.

Commitment to a particular social role can vary, according to the degree to which the individual felt the role was satisfying to the individual and others in a particular social situation. If a person was not happy with his/her repertoire of roles, and their effect in social situations, he/she was capable of changing both the roles and the environment within which he/she utilized those roles. The following definition of social psychology was an attempt to capsulize these philosophical ideas (Harre and Secord, 1972): "Social psychology is the study of how man monitors his behavior relative to a particular social role and in the context of a given episode."

History of the Running Craze

Running, for the purposes of sport and as a means of travel, has been a feature of society throughout history. As a sport event, its history dates back to the first Olympic Games held in Greece in 776 B.C. Running was the premier event in the early Olympics, beginning as a 200 yard foot race and gradually expanding until numerous running events filled out the schedule of the Games (Quercetani, 1964). Running remained a popular feature of the Olympics until the Games themselves were banned in A.D. 393 by Emperor Theodosius.

The Roman Empire, which at that time was the leading world power, maintained the sport of running for a time as a circus event. As the power of the Roman Empire waned and the once unified regions reasserted their independence, runners became valuable as couriers. Persian couriers of the Turkish Sultan often ran from Constantinople to Adrianople and back, a distance of 220 miles, in two days and nights (Quercetani, 1964). Runners were also used as couriers in the Americas, India and parts of Africa (Encyclopedia Britannica, 1972).

In the 1800's, prior to the revitalization of the Olympics, the best runners reportedly appeared as professionals, entering races for monetary rewards. In 1896, the Olympics reinstituted competitive amateur running on an international scale. The concurrent introduction of the marathon, based on a mythical run from Marathon to Athens by an unknown Greek soldier, started a trend in running that is felt today (Quercetani, 1964).

The early marathons did little to recommend themselves to the public at large. Beset with charges of tampering, if not outright cheating, they were judged by most spectators as peripheral to the more legitimate Olympic events. A strange occurrence in the 1912 Marathon, however, provided the drama necessary to spark the public's imagination and subsequent interest in running. At the end of the race, where the contestants re-enter the stadium, an Italian runner named Pietri turned the wrong way and collapsed. With the aid of concerned bystanders, he managed to finish the race, but was subsequently disqualified because of the assistance he had received. The sight of this game little competitor struggling to reach the finish line was cited by some authors as a leading factor in popularizing the marathon craze that swept America in the early 1900's (Quercetani, 1964).

The modern day resurgence in popularity that running has achieved was generally regarded as a phenomenon born of the 1960's. The irony was that this popularity was fostered by a generation raised on ever-increasing prosperity and ever-decreasing levels of physical activity. Undoubtedly there were many reasons why running achieved this degree of popularity, but one of the earlier forces has to have been the record breaking successes of New Zealand runners under coach Arthur Lydiard (Spino, 1976). A proponent of long, slow, distance training, Lydiard was so successful with such notable athletes as Peter Snell and Murray Halberg that the Mexican government invited him to their country to help them prepare their athletes for the 1968 Olympics. He was subsequently invited to the United States where his lectures on running did much to popularize both his method and the sport of running in North American society.

At approximately the same time, Cooper (1968) published his book on aerobics. Destined to achieve tremendous success, Aerobics sold some five million copies and did more than any other book on the subject to popularize and provide an understanding of the tremendous physiological benefits of the sport of running.

Written so that the layman could easily understand the terminology, Aerobics provided a discussion of the various forms of activity as well as a discussion of the physical changes that accompanied regular aerobic exercise.

Cooper (1968) maintained that during exercise, the lung muscles were forced to contract and expand to such a degree that a training effect was initiated resulting in stronger muscle tissue. The effect of these strengthened lung muscles was to increase the individual's vital capacity and reduce the residual lung volume. In turn, that allowed more oxygen to be available for transportation to muscle tissue throughout the body.

In response to regular exercise, the body adjusts the amount of blood stored in the body as well as the size and structure of the blood vessels. This appears to be in direct consequence of the body's demand for an improved transportation system, both in terms of supplying oxygen and various required nutrient and in removing carbon dioxide and other waste products. Cooper (1968) speculated that the average person could increase one's blood volume by as much as one quart in response to the demands of frequent physical exercise. The blood vessels that transport this increased blood supply appeared to adapt by increasing their numbers, size and pliability. The individual's perception of these changes was that one could work harder for longer periods of time and actually undergo a reduction in blood pressure.

Perhaps the most noticeable effects of any frequent and regular exercise programme were in the areas of muscle tone and weight control. Exercise, such as running, greatly increased the muscle tone of the legs, abdomen, shoulders and arms while at the same time providing a net caloric cost of approximately 125 - 175 calories per mile, depending on body size.

Cooper's (1968) outline of these and other beneficial effects that could be garnered from aerobic activities no doubt had a tremendous effect on the populace in terms of motivating them towards regular physical activity. The fact that Cooper specifically advocated running as the best overall form of aerobic activity no doubt added tremendously to its popularity.

Another landmark in the increasing popularity of running occurred at the 1972 Munich Olympics. In front of an estimated 60 million viewing Americans, Frank Shorter won the gold medal in the marathon, a feat no American had accomplished since 1908 (Spino, 1976). This event probably had more impact than any other in terms of elevating running from an activity engaged in by the eccentric to one that could possibily be enjoyed by many.

By themselves, and in the context of history, these events were relatively minor, but occurring when they did, their impact was overwhelming. Never before in human history had a generation become as prosperous and sedentary at the same time. The spurt in technology and wealth allowed individuals to achieve almost every aspect of their lifestyle without a corresponding output in physical exertion. Cheap transportation, shorter working hours coupled with all sorts of labour-saving devices allowed the average individual greater periods of free time. Unfortunately, the precedent for the use of this leisure time had been set long before. Jokl (1977) pointed out that even as late as the 1930's, the production of leisure time was foreseen as an event, not for sport and play, but rather as an opportunity to enrich oneself with the study of philosophy, the arts and literature. This attitude, probably more than any other, ultimately led to the active participation of some 25 million Americans in the sport of running. This paradoxical statement arose from the sometimes unbelievable coping power of human nature. Gradually aware that their sedentary lifestyle was leading to a deterioration of their quality of life many individuals began to look for something to restore their vigour. Running promised to do this; the unexpected bonus was the tremendous psychological uplift it also provided. Eventually, runners would seek out the psychological benefits with as much enthusiasm as they had once sought out its physiological benefits.

Effects of Running on Anxiety and Depression

Reasons given by most runners for their running behaviour appeared very much dependent on how long that runner had been involved in the activity of running. Beginning runners typically cited cardiovascular fitness, peer pressure to become involved in some type of recreation, or training for another sport as reasons for their involvement with running. At some point, however, providing the runner continued, he/she began to realize the effects he/she was experiencing from the running were taking on added dimensions. By way of example, Davidson and Schwartz (1976) in a study of relaxation, proposed that an exercise such as running was a total mind-body experience because the activity automatically demanded complete response of the somatic system as well as concentration from the cognitive faculties. Involving the person to such a degree allowed previous mental and physical inputs to be replaced by entirely different ones. Since they felt that anxiety was a product of elevated somatic tension, cognitive background noise or both, it could be alleviated by forcing the mind and body to adjust to a new basal level through running. Upon completion of the period of exercise, the individual entered a period of relaxation and minimal anxiety as a result of the restructured cognitive and somatic channels.

This attribute of running seemed to allow the individual to cope with the stress of everyday life and may have been the root of why people continued to run far in excess of the demands of physical fitness. There was some disagreement as to the sources of anxiety and depression - generally the causes have been linked to economics, current lifestyles, moral decline, erosion of the family structure or alienation of the individual from work and play, but there was little doubt that exercise could alleviate the effects of anxiety and depression.

Brown, Ramirez, and Taub (1978) used running as a treatment for depression and found that depression scores were lowered, both in the depressed group and in a non-depressed control group with a ten-week (five days per week) running programme.

Lion (1978) in his study of the psychological effects of running compared a treatment and control group of discharged psychiatric patients to measure the effects of exercise on anxiety. Subjects were given a battery of pre- and post-tests for anxiety in an attempt to measure the effects of running one mile a day, three times a week, for a two-month period. The control group, which did not run, but was given an equal amount of attention, showed a slight increase in anxiety, while the runners displayed a significant drop in anxiety scores. A related finding, though not statistically significant, showed a tendency for perception of self to become stronger, more protected and less vulnerable. This would seem to indicate that the individual's self-esteem and self-regard were tied into the state of his/her anxiety, and were being heightened in response to the increased performance of body function.

Research by Folkins, Lynch and Gardner (1972) on psychological and physical fitness compared two groups of students over the period of one school semester. One group was involved in light recreation (card playing or chess) while the experimental group was involved in more intense sport activities (badminton, basketball, running). The pre-test scores for both groups showed very little psychological differentiation. Post-test scores showed the group involved in sport activities evidenced less depression and anxiety on anxiety and depression rating scales. In the discussion the researchers surmised that not only does activity reduce the effects of anxiety and depression, but that this reduction would be greatest for those individuals in the poorest physiological and psychological condition. This conclusion corroborated a study by Morgan, Roberts, Brand and Feinerman (1970) in their research on the psychological effects of chronic physical activity. Their study compared adult males participating in an exercise programme with a sedentary control group. They found that although exercise did not significantly reduce depression scores across the entire experimental group, depressed subjects within the group showed the greatest improvement as measured on the Zung Self-Rating Depression Scale. The authors concluded by suggesting the tests for normal individuals were not sensitive enough to detect psychological changes following exercise. What may be needed is more prolonged and intense exercise before psychometric tests reflect this change.

Reasons for the Effects of Running on Anxiety and Depression

Other authors have wondered why, or how, running could have such an immediate effect on anxiety and depression. Martin (1977) reviewed the literature on activity therapy and concluded that there was some positive psychological carryover from mastering a difficult skill such as running. He also noted that depression was often accompanied by feelings of helplessness or of not being able to accomplish anything of worth. Running allowed these individuals to succeed in some endeavour, specifically, to run a specified distance and ultimately be in control of their own level of physical fitness.

Analysis by Greist, Klein, Eischens, Faris, Gurman and Morgan (1978) of the literature related to aspects of physical fitness and psychological improvement proposed that when physical functioning of large and small muscle groups was brought under better control, the person's intellectual and emotional components had greater opportunity for maturation and expression. Greist et al. (1978) proposed that nine factors helped to explain the effect running could have on anxiety or depression: 1) It provided the opportunity to master a difficult skill; 2) It teaches the individual that he or she can be patient, both with oneself and the effort needed to master this skill; 3) It reminded individuals that they do have the capacity for change, being able to move from low self-esteem and personal regard to higher levels of self-acceptance; 4) The effects of being competent in running could become generalized so that the individual begins to feel competent in other areas of one's life; 5) Running may have a distracting quality for the depressed individual by substituting new and different bodily sensations; 6) Running comprises a 'positive' activity that the individual can substitute for more negative or neurotic habits; 7) The pleasure involved in running provides symptomatic relief from the effects of anxiety or depression; 8) Running can provide the setting for a state of altered consciousness, however, it appeared this aspect of the running experience was only available to very intense and experienced runners; 9) The author suggested that certain biochemical changes within the body as a result of physical exercise may have some influence in terms of relieving the effects of anxiety and depression.

A similar analysis by Hollandsworth (1979) pointed to four factors inherent in running that may contribute to its power to alleviate anxiety and depression: (a) Running increased awareness of one's biological functioning and subsequently adapted the individual to stress situations in one's everyday life; (b) It contributed to increased physical fitness which helped the individual to meet the purely physical demands of everyday living; (c) Running resulted in a reduction of actual muscular electrical activity (tension) and as a consequence may have reduced the subjective perception of anxiety levels; (d) Finally, running may have provided time out from stresses and pressures so that problem solving was facilitated, perspective was regained and frustration reduced.

Running as Therapy

Psychotherapists have recognized the potential therapeutic value of running. For example, Greist, Klein, Eischens, and Faris (1978) treated 28 depressed patients by randomly assigning them to one of three psychotherapeutic treatment groups. One of these groups was to employ running as a treatment for reactive or neurotic depression. After three weeks of treatment, seven out of the eight patients in running therapy were considered "cured." The authors concluded that biochemical changes as a result of the running experience accounted for some of the mood change, but also noted that the perceived changes in body image gave a psychological lift to the patients. They also noted (in the case of one patient), that depression could reoccur if too much running led to physical deterioration (injury) in the individual.

Orwin (1973) treated agarophobia with running on the assumption that when individuals become panic-stricken, their natural tendency should be to remove themselves as fast as possible from the anxiety-provoking situation. Orwin noted that individuals with agarophobia were reticent to leave a panic area or situation quickly because of their association of heart palpitations with the panic state. Running from a fear area only served to reinforce, in their minds, the fact that they were in a high state of panic or anxiety. In order to avert this fear, Orwin had his patients run from a base area of low anxiety to a "fear" area. The treatment factor was felt to be the individual's equating the palpitations with physical exertion rather than the anxiety produced by the fear area. Later in the treatment, Orwin had his patients run through the fear areas, gradually slowing their pace until their fear was dissipated. Orwin, in analyzing why the treatment was so successful, concluded that the physiological changes accompanying anxiety were congruent with the running experience. For example, heart palpitations were usually associated with hard work; when the individual was not working hard the mind interpreted these heart palpitations as a symptom of anxiety. In essence, Orwin's treatment attempted to break the cyclical pattern of agarophobia, wherein mild anxiety in a strange environment leads to heart palpitation which, in turn, leads to heightened levels of anxiety.

Orwin's analysis was in agreement with Schacter's (1964) earlier research on the interaction of cognitive and physiological determinants of the emotional state. Schacter suggested that if the source of physiological arousal could not be clearly defined, it may have been labelled at the cognitive level as the emotional state most in keeping with external influences. Panic or anxiety, no matter how provoked, were considered irrational states and could have led the individual towards a generalized loss of confidence in one's ability to handle stress situations.

Orwin (1974) utilized running in a subsequent treatment of a young girl with a fear of strange lavatories. In order to reduce the symptoms of her fear, he encouraged her to participate in a programme of running from base areas of low anxiety to the fear area (lavatory). With five sessions of this treatment, the girl no longer experienced the high levels of anxiety upon entering a strange lavatory. Orwin concluded in that study that exercise completed the pattern of anxiety, in that individuals usually moved to avoid anxiety. Running allowed the completion of this pattern.

Kavanagh, Shephard, Tuck, and Qureshi (1977) attempted to use running as a treatment for 44 depressed post-coronary patients, 16 to 18 months after their myocardial infarction. The resultant changes in mood were minimal, although there was a trend toward less depression. Kavanagh _et_ _al._ (1977) suggested the less than significant results were a reflection of concurrent variables. For example, the drugs being taken by the patients to reduce angina and dysrythmia caused a slight depression. Secondly, the overreaction of spouses tended to make the subjects even more concerned with their own potential death. Finally, the proximity of the treatment to the original attack, and its short duration (two months) may have contributed to the lack of significant change in self-regard necessary to the alleviation of depression.

Physical Fitness and Self-Concept

The relative brevity of therapeutic running programmes has made some researchers suspicious of the relationship between physical fitness and self-concept. Running obviously affects anxiety and depression in a positive manner, but does it do so as a consequence of physiological changes, altered self-concept, or both?

Harris and Jennings (1977) investigated the self-perception of

68 female distance runners by means of a personal attributes questionnaire in order to determine how they perceived themselves on various desirable personality traits. Results of the study highlighted the fact that female runners had significantly more self-confidence (a desirable trait) than non-runners, and that females evidencing androgynous or masculine traits (e.g., independence and aggression) were highest on self-esteem. Traditionally it was thought that women highest on androgynous or masculine traits would have lower self-esteem. The question arose whether physical fitness was the cause or effect of these self-perceptions.

Gary and Guthrie (1972) studied hospitalized alcoholics in an attempt to correlate effects of physical fitness on self-concept. Proceeding on the hypothesis that hospitalized alcoholics were in very poor physical condition, and hence low in self-esteem, they attempted a running programme to investigate if it were possible to raise self-esteem concurrent with an increase in physical condition. Twenty alcoholics were randomly assigned to running or control groups. Evidence from the study supported the hypothesis that "self-evaluation would improve with increased physical fitness." The data suggested that the improvement was not simply a reaction to the enthusiasm and positive self-evaluation that occurred during training (1972:1076). It was interesting to note that the changes, although not significant, came after only 20 days in the running programme. There was room for speculation that increased lengths of participation in a running programme may have provided more significant changes in personality and self-esteem.

Heaps (1978) in an article discussing physical and psychological fitness, suggested that those body characteristics lowly valued by subjects may have undermined their self-regard, while highly valued body characteristics may have had an opposite effect. The author also suggested that it was a person's feelings or attitudes toward one's physical condition, not actual level of fitness, which were related to certain kinds of positive psychological functioning. He based this assumption on a comparison with Schacter's (1964) work, where injections of epinephrine were interpreted by the subject as either euphoria or anger, depending on the nature of the external cues. Using this research as a basis for speculation, it may have been that joggers provided each other with the positive environmental cues necessary to feelings of high self-regard and esteem.

Leonardson and Gargiulo (1978), investigating self-perception and physical fitness, trained 15 subjects for ten weeks. Their results, although not statistically significant, indicated that perceived physical fitness accompanied an increase in actual performance. They did find a significant correlation in pre- and post-test measures on both perceived and actual physical fitness, as well as a significant correlation between perceived physical fitness and self-concept. However, actual physical performance and self-concept were not significantly correlated.

The relationship between perceived physical fitness and self-concept was further substantiated in a study by Leonardson (1977) who utilized the Piers-Harris children's self-concept scale on 165 high school students, as well as an adaptation of the semantic differential for a measure of self-concept on 33 college students. He utilized a five-point fitness scale for high school students and a nine-point perceived fitness scale for college students. Results showed a significant correlation existed for both groups (slightly higher for college), between self-concept and perceived levels of physical fitness.

Jorgenson and Jorgenson (1979) analyzed the effects of running on perception of self and others by mailing a questionnaire to 984 persons associated with running clubs in the United States. Of the 497 returned, 454 individuals ran regularly (an average of 22 miles per week). The instrument contained 55 questions related to perceptions of change as a result of running on a regular basis. Results showed that 92 percent of the respondents perceived increased emotional well-being from running, 97 percent perceived an increase in their physical well-being, 73 percent thought they had an increase in friendships as a result of running, 68 percent indicated increased criticism by themselves for those individuals in poor physical condition, and 74 percent of those respondents in a family situation perceived an increase in their families' appreciation of their improved physical appearance. The authors also noted that no differences in perception of changes existed between male and female respondents.

Intense Exercise and Personality Change

The type of responses in perception of self, reported by runners, indicated a definite change in personality was occurring in conjunction with the development of higher levels of physical fitness. Ismail and Tractman's (1973) investigation of the psychological effects of running divided 28 men into categories of low and high fitness based on cardiorespiratory efficiency and resting heart rate. As a measure of psychological fitness, they employed Cattell's 16 P.F. questionnaire to determine the relative differences in psychological profile of each group. After ten weeks of training, the low fitness group attained a level on factor C of Cattell's 16 P.F. (emotional stability) that made them virtually indistinguishable from the high fitness group on the same factor. They concluded that the effects of running were not only physiological but accounted for subtle changes in personality as well. Extrapolating from their data, it appeared that one of the initial psychological changes resulting from running may have been a shift to higher levels of extroversion.

In a more comprehensive study of the effects of chronic exercise on the personalities of adults, Ismail and Young (1977) selected 58 men to participate in three, 90-minute sessions of running and recreation each week for four months. Lighter recreation (badminton, volleyball) served as a warm-up and warm-down to a running programme that gradually increased to five miles per session. The Minnesota Multiphasic Personality Inventory (M.M.P.I.) and a treadmill test constituted pre- and post-treatment measures of physical and psychological changes. Concurrent with these measures was a blood enzyme analysis designed to test the changes of enzymatic excretion within the body. The resultant correlations confirmed that selected biochemical compounds (testosterone, catecholamines) were, in fact, related to changes in physical and psychological functioning. More specifically, high levels of catecholamines were related to low super ego strength, unconventionality, extroversion and neuroticism. In their discussion, the authors suggested that depression may have been associated with a deficiency of catecholamines, particularly norepinephrine at functionally important andrenergic receptor sites in the brain (1977:966). Ismail and Young (1977:966) further stated that:

> It would seem reasonable to speculate that a considerably longer and intensified period of regular (habitual) exercise is necessary to cause a dramatic change in personality parameters. Such a change would be the result of a significant alteration in body chemistry since physiological, biochemical and personality domains are inextricably interrelated.

The speculation that dramatic personality changes could be brought about by intensive and long-term exercise was supported by Gontang's (1977) study of 50 sub three-hour marathoners. The intent of the study was to assess whether a relationship existed between personality type and sub three-hour marathoning. Using the Myers-Briggs Type Indicator Form F (M.B.T.I.) to determine an individual's personality type, he attempted to analyze the runners on the continuums of the four basic coping preferences; 1) extroversion-introversion, 2) sensing-intuition, 3) thinking-feeling, 4) judging-perceiving. The underlying assumption of this test was that behaviour usually followed an orderly pattern, differentiated only by certain basic variations in mental functioning. These variations were usually reflected in terms of how the individual preferred to deal with the environment.

Results of the study highlighted the fact that introverts had been running longer than had the extroverts. Their numbers were 2:1 in comparison to the extroverts, an unusual finding in light of the fact that in "normal" populations of marathoners, extroverts outnumbered introverts three to one. Their research allowed speculation that the physiological and psychological effects garnered from long distance running could have variable effects on the personality depending on the length and intensity of training. Early effects of the running experience appeared to shift the individual toward an extroverted type of personality. After a period of time, and in the context of a more intensive involvement, the individual might begin to reflect a more introverted style of dealing with the environment. When considered in the context of the definitions of each preference, extroversion reflecting an interest towards the outer world of objects and people, and introversion reflecting a tendency to be involved in the inner world of ideas and contemplation, the shift in perceptual focus seemed intuitively to make sense. Beginning runners, with increased perception of physical fitness, heightened self-concept and new-found friendships would reflect those positive changes with a shift towards an extroverted personality type. Elite, experienced runners attuned to longer, more singular (very few people can maintain their pace on a day-to-day basis) periods of exercise would become somewhat habituated to the inner world of ideas and contemplation, and hence reflect the introverted personality type.

The psychometric profile of the elite distance runner in the study by Gontang _et al._ (1977) highlighted such characteristics as perseverance, hard working, patient with routine, hard to distract, resistant to giving up easily - all characteristics, that on the surface at least, would seem invaluable to the makeup of an elite long-distance runner. Figures 3 and 4 illustrate the perceptual focus that may result in consequence of the length of time involved in running and the intensity of the training.

Morgan and Pollock (1977) examined the psychological profiles of marathoners, oarsmen and wrestlers and found they all scored well below the normal population in tension, anxiety, depression, fatigue and confusion. In order to glean further data on the marathoners, they divided them into two categories based on their best marathon time. Those capable of running a marathon under two hours and twenty minutes

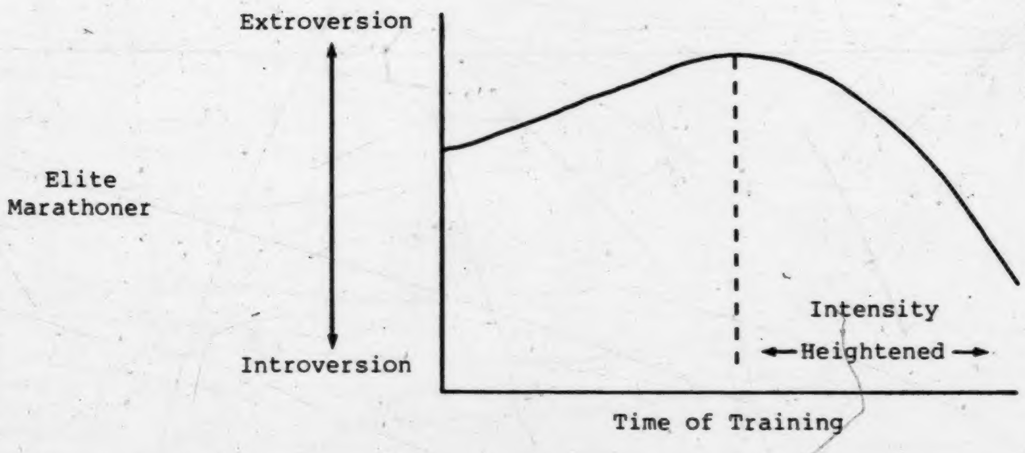
Extroversion
Elite
Marathoner
Introversion
Intensity
Heightened
Time of Training

Figure 3. A general model of personality change in elite marathoners.

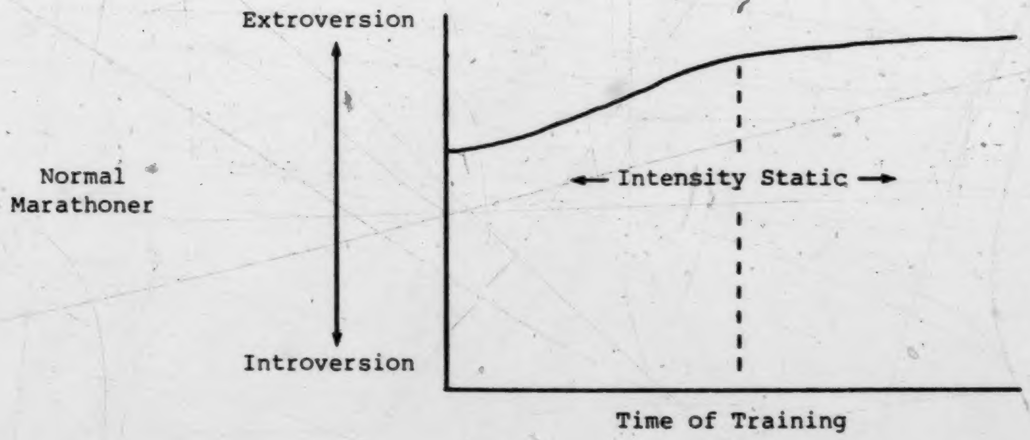
Extroversion
Normal
Marathoner
Intensity Static
Introversion
Time of Training

Figure 4. A general model of personality change in normal marathoners.

were classified as elite marathoners; those over two hours and twenty minutes as normal marathoners. Interviews focussing on their running strategy revealed that elite marathoners typically employed associative techniques throughout the run, paying strict attention to the physiological and psychological changes occurring in their bodies. Normal marathoners, by way of contrast, utilized dissociative strategy, ignoring body signals and concentrating instead on an imaginery task or strategy. Many reported they had built a house step by step, or reviewed their entire academic career in the course of a marathon.

Morgan and Pollock (1977:399) concluded that:

> The psychometric data reveal that elite distance runners resemble outstanding athletes in other sports such as wrestling and rowing, and their affect (mood) seems to be consistently superior to that of the general population. Further since they do not differ from the general population on personality traits such as extroversion-introversion and neuroticism stability (enduring qualities) it is theorized that the positive affective profiles (states) reflect the consequence of involvement in distance running, not an antecedent or selection factor {emphasis mine}.

Morgan and Pollock's (1977) findings differed from the 1977 study by Gontang, Clitsome and Kostrubala in that they did not find the same ratios of extroversion and introversion. This may have been partially explained by the balancing effect (in terms of personality preference) the two levels of runners could have on each other. Had they utilized psychometric profiles on each sub-group, they may have detected the differences in extroversion-introversion reported by Gontang *et al.* (1977). Regardless of this discrepancy, the postulation by Morgan and Pollock (1977) that the profiles of runners reflected the consequences of their involvement and not merely a prior existing selection factor, was a noteworthy addition to a preliminary understanding of the effects of distance running.

Clitsome and Kostrubala (1977) analyzed 83 male and 17 female marathoners, utilizing the M.B.T.I. as a measure of their psychological preference when dealing with their environment. Results showed, that when compared to the norm, the study group contained twice as many introverts as extroverts. This was in direct contrast to normal populations of non-runners where extroverts outnumbered introverts. Within the study group introverts were balanced with extroverts; unfortunately, Clitsome and Kostrubala (1977) neglected to correlate introversion and extroversion with length of time running and level of performance (intensity).

In summary, it appeared that it was possible for individuals to shift along the continuum of extroversion-introversion as a direct consequence of their involvement with running. Long distance runners could become introverted at some point in their involvement due to their continuing exposure to biochemical changes (catecholamines) resulting from exercise as well as the psychological exposure to ideas and long periods of unique contemplation occurring in the time frame of the long distance run.

The Brain's Opiates

Research to this point has shown that running or intense physical exertion produced high levels of catecholamines in the blood stream. These internal opiates were believed to be partly responsible for the changes in mood experienced by runners. How these opiates were secreted, and to what extent they could influence psychological functioning has been studied primarily in the context of psychiatric therapy, the thrust of which has been to determine a natural method of restoring appropriate or normal chemical levels in the brain.

Villet (1978) in a review of the effects of endorphins (internal opiates produced in the brain) noted that norepinephrine seemed to be the chemical in charge of some exceedingly important nerve pathways in the brain associated with transmitting the signals of perception and emotions. She highlighted its effects in the following statement (1978:88): "Here is this fascinating substance made right in our bodies and we found that it worked in {treatments of} schizophrenia, depression and addictions." Her observations, regarding the effects of norepinephrine in psychotherapy were remarkably similar to the effects other authors have claimed for the running experience. Villet's claim that norepinephrine was effective in the cure of addictions was based on the assumption that: "addiction is a deficiency disease and the addicts craving for and dependence upon opiates is caused by chronic underproduction of natural endorphins" (1978:89). The question arose as to what immediate effect the secretion of norepinephrine had on the physiological and psychological functioning of the individual.

Snyder (1977) in a discussion of opiates and opiate receptors in the brain suggested that their role was primarily that of alleviating pain. The Limbic system, generally considered to be the system in charge of emotional arousal and the emotional components of pain, has the highest preponderance of opiate receptors and hence was most susceptible to the effects of opiates. Snyder noted that duller, more chronic and less localized pain was quite effectively relieved by opiates (1977: 48). Since the Limbic system was more concerned with the emotional components of pain, opiate effects would be more euphoric than analgesic. Runners would experience the effects of these internal opiates on two fronts; firstly, the chronic pains experienced by many runners as a result of shin splints, tendonitis, and strained muscles would be alleviated as the run progressed and the opiates were secreted, and secondly, the runner would begin to feel euphoric as the level of catecholamines increased in the Limbic system. An amazing finding related to opiate secretion was that, as physical exertion and psychological involvement in the activity were elevated, the levels of catecholamine secretion were elevated exponentially (Cameron, Blimkie, and Yeung, 1974; Haggendal, Hartley, and Saltin, 1978; von Euler, 1974).

These findings suggested that, depending on the intensity of involvement in running, it was possible for a runner to provide oneself with considerable doses of pain-alleviating and euphoria-producing norepinephrine. Obviously these effects were transitory, limited to the time frame of the running experience, but done on a regular basis the individual could begin to perceive the effects of these opiates as a natural part of the running experience, and seek out the run to provide oneself with the pleasurable release of chronic pain as well as the emotional, analgesic and euphoric effects running had on one's thinking processes.

Snyder (1977) also attempted to explain the sequence of events that led to withdrawal symptoms in narcotic addictions. He suggested that the infusion of synthetic opiates temporarily overloaded the opiate receptors in the brain. The receptors then relayed a message to the enkalphin neurons to cease producing the natural opiates. The resultant effect was that the body's own endorphin producing system was shut down for a period of time. As the synthetic opiates dissipated, the brain was temporarily without an opiate system. In that space of time, before the cells began production of endorphins, they evidenced a rebound effect by producing an excess of adenosine monophosphate, which Snyder contended, triggered the onslaught of withdrawal symptoms. Individuals involved in strenuous physical exercise would no doubt have a similar pattern. The involvement and intensity of the run could raise natural opiates to the level where the endorphin producing system shut down for a period of time until the opiate material dissipated. How the body handles and reacts to its own opiates, however, is the subject of future research; at this point we can only speculate that the endorphin producing system is deactivated for a period of time. The fact that runners do evidence symptoms of withdrawal when deprived of regular activity suggests that some form of chemical change occurs as the body seeks out a homeostatic state.

Psychological Changes in the Running Experience

Various authors were concentrating on the psychological effects of running as an explanation for personality change (Glasser, 1976; Robinson, 1978). While aware of the effects catecholamines could have on the mood of the individual, these authors nevertheless maintained it was the individual's perception of these effects which underlay any personality changes that may have occurred. The shift in perceptual focus which seemed to accompany long-term running may have had its beginnings in biochemical changes, but since these changes were transitory by being limited to the framework of the run, there was room for speculation that powerful psychological processes were concurrently at work rearranging, or at least influencing the individual's basic personality characteristics. These psychological processes may have lost some of their influence over the individual's basic personality after the run, but the "memory" of them may have been sufficiently strong to instigate the beginning of a personality change.

Lateralisation Theory

Lateralisation theory arose from the fact that the human brain was separated into two hemispheres, each serving an entirely different cognitive function. This dichotomous functioning has led to speculation that each individual deals with the environment through the cognitive style afforded by either of the two hemispheres. This belief, that humans had two forms or styles of consciousness has existed for centuries in folklore and superstition but until recently did not appear to have any basis in fact.[2]

Recently a psychosurgical technique was discovered that provided relief from "grand mal" seizure in certain kinds of epilepsy. By severing the corpus collusum which joins the two halves of the brain together, patients were relieved of the violent, sometimes criminal, acts that accompanied their seizures. Subsequent studies of these split brain patients has led to some basic understanding of the interrelationships between the two halves of the human brain (Bakan, 1971; Gassaniga, 1967; Ornstein, 1973).

The left hemisphere appears to be responsible for activities related to speech, writing, analytic functions and time discrimination.

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[2] The legends of werewolves and vampires, or the story of Dr. Jekyll and Mr. Hyde reflect this belief that one could operate through completely different personalities, both existing within oneself.

The right hemisphere appears to be responsible for non-verbal functions such as spatial perception, body image functions and recognition of melodies and faces (Bakan, 1971). The two hemispheres also appear to function at different levels of arousal, the left hemisphere typically higher than the right. This may indicate that altered states of consciousness (supposedly reported by long distance runners) may be a function of the right hemisphere. Further evidence for these states being a function of the right hemisphere comes from the fact that altered states of consciousness typically defy logical verbalization, a characteristic of the left hemisphere (Bakan, 1971:67). The fact that runners have difficulty explaining certain feelings of happiness or euphoria associated with the run may exemplify the fact that these feelings are formed in the right hemisphere.

Glasser (1978) felt that lateralisation theory held the most promise in terms of explaining the altered states of consciousness that many runners report. Typically these states occurred when running alone; obviously the stimuli presented by other runners prevented the runner from slipping over into right hemisphere functioning. Since runners report that most altered states occurred during the latter stages of a long run, Glasser (1978) maintained that the individual was gradually disassociating from the activities normally engaged in by the left hemisphere. As this occurred the individual began to perceive the environment through a different cognitive process, one that could have led to an altered state of consciousness.

On the surface, lateralisation theory appeared to hold some promise for understanding the shifts that could occur in the personality structure of long distance runners. The supposition that a runner's personality could shift along a continuum of extroversion-introversion, depending on the degree and intensity of one's running behaviour, appeared more understandable in the context of a dichotomous brain, that within itself could shift from analytical and highly logical thinking modes to those that were more attuned to imagery, spatial perception and other non-verbal functions. This may have seemed paradoxical in that each individual was no doubt capable of allowing the brain to shift its preferred cognitive style in response to cues in the environment. After an intense bout of analytical functioning the brain may be designed to lower its arousal level and shift towards the non-analytical style of cognitive functioning. However, the preference an individual has developed for one or the other cognitive style may dictate the extent to which one would "let himself {or herself} go." Many individuals appeared to be so left hemisphere-oriented that no matter what the situation, they would find it extremely difficult to consciously allow themselves the respite of right hemisphere functioning. This may explain why certain individuals claimed to have never experienced an altered state of consciousness. On the other hand, those who preferred the cognitive style of right hemisphere functioning were regarded by many in our society as mystics, daydreamers or fantasizers and they too could experience some difficulty in shifting their preferred cognitive style.

One must summarize lateralisation theory by pointing out that its precepts were based on research only slightly applicable to the normal population. Data obtained from split brain studies must be viewed within the context from which it was obtained since ordinary individuals have an intact corpus collusum and were quite capable of shuttling information between the respective hemispheres. This movement of information obviously lessened the contrast in function and allowed some duplication of response ability to cues in the environment. For example, in normal individuals, it was quite conceivable that right hemisphere functioning could be verbalized to a degree; otherwise, most of the creativity arising from this cognitive style would never find expression.

Intrinsic Motivation Theories

Regardless of what was happening to the individual at the psychological or physiological level during a run, it was one's perception of the relative enjoyment of the experience that dictated any further and continued involvement. Determining to what extent, and on what basis an individual was intrinsically motivated, was essential if we were to understand how an individual could have persisted in an activity that could be as boring as running. This was not to suggest that running was always boring to the individual, only that certain stages of one's involvement could have been bereft of enjoyment or personal satisfaction. At those stages internal factors were at work pushing a person on, otherwise the individual would have simply quit.

Flow

Csikszentmihalyi (1975) recognized that play and sport had the capability of totally involving their adherents. He felt that there must be qualities inherent in play and sport that could intrinsically motivate individuals to high levels of involvement and subsequent pleasure. His study attempted to determine the intrinsically motivating factors of play and sport so as to determine the feasibility of structuring those same factors into the working world. Simply stated, he was attempting to find out why people had fun when they played and if it was possible to make work into play, or at least make it as enjoyable.

The concept of flow that Csikszentmihalyi (1975) developed was an attempt to describe the wholistic sensations that occurred when individuals acted with total involvement. He stated that flow was a merging of action and awareness, the individual was aware of the actions taking place but lost the awareness of self so characteristic of lower levels of involvement. If that awareness of self had broke in upon us as it did even in the world of play, then we experienced what Csikszentmihalyi referred to as interludes (between play), which he defined as brief periods of awareness of self which destroyed the state of flow. One could recover this flow state by simply manipulating the challenges and/or skills until involvement merged with awareness, at which point the flow process resumed. Csikszentmihalyi argued that this manipulation of challenges and/or skills was a necessary component in the concept of flow. He assumed that competition, which had become such an integral part of sport and play was necessary to provide the high level of involvement characteristic of flow. Competition not only served to induce the individual into the situation, but provided one with external feedback necessary to continuous monitoring of the situation. This monitoring or evaluation could not reflect on the individual's performance. It must have been limited to providing the individual with clear situational feedback; otherwise, the flow process was interrupted by the individual becoming aware of the self. Csikszentmihalyi (1975) maintained that flow occurred when one had moved past boredom and yet remained outside of the constraints of anxiety. On the continuum proposed in this paper (as illustrated in Figure 6, Chapter 3), flow occurred when involvement and awareness merged. The pleasure component was high but appeared to fall short of the euphoria described in the peak experience (Maslow, 1970; Ravizza, 1975).

Although Csikszentmihalyi (1975) may have disagreed, the functioning of self-awareness still appears dichotomous, in that both participatory behaviour and monitoring behaviour are being evaluated. The manipulation of the challenges and/or skills which he assumed were necessary to the maintenance of flow served to point out that the individual must be aware of the participatory behaviour. In this sense, flow does not reach the high stage of personal involvement and enjoyment that can occur when the evaluation and manipulation of the participating behaviour has dropped off. The flow concept can help us to understand the initial stages of the peak experience and positive addiction state (to be discussed later), inasmuch as it discussed subjective interpretations of peak performance. It was limited, however, in explaining the transcendent experiences that accompany the higher reaches of involvement and enjoyment, where consciousness of the activity was minimal.

In regard to the running experience, the flow concept can help us understand how the runner began the run under almost tedious circumstances and gradually moved, in the later stages, to a state where involvement began to merge with one's awareness and the function of the self became less dichotomous.

The Peak Experience

The concept of the "peak experience" as developed by Abraham Maslow (1967) attempted to describe those moments when individuals experienced almost overpowering feelings of unity, happiness or joy. The experience, reportedly, took on such dimensions that the individual felt completely lost within it; unconcerned with controlling or monitoring performance within the situation. How and where these experiences originated remained uncertain in Maslow's mind: "They came from the great moments of love and sex, . . . from the bursts of creativeness and the creative furore, the great inspiration, from great moments of insight and of discovery . . . from certain athletic experiences" (1967:12).

Conceptualized quite differently from the state of "flow," the peak experience could not be planned for, or manipulated within the context of an activity. It appeared to break upon the individual unexpectedly, and once dissipated, was resistant to attempts at recapture. Maslow implied that the "peak experience" occurred as a result of some perception on the part of the individual that one's behaviour was creative. Once an individual sensed some form of creative expression within a particular activity, the person was on the edge of the "peak experience." The problem that immediately arose with this explanation was the difficulty of defining creativity, or the creative experience. Maslow suggested that creativity was serendipitous, flashing in on the individual from nowhere, replete with startling revelations and meaningful insight. The literature, however, pointed out that creativity was not serendipitous, but a planned process, painstaking in its deliberations (Getzels and Csikszentmihalyi, 1967; Mackler and Schontz, 1965; Roe, 1963, Simon, 1965; Wallach, 1967).

There was little doubt that the peak experience was describing the highest reaches of human involvement and pleasure. According to the model proposed in the present study (illustrated in Figure 6, Chapter

3), it occurred when the monitoring of participatory behaviour was at its lowest and non-critical evaluation of the monitoring process was at its height. What was lacking in the concept, as Maslow (1967) proposed it, was any delineation of the stages or processes leading up to the peak experience. Did it come from nowhere, or did it build in the individual, perhaps utilizing "flow" as an interim process? The present investigation, in a manner similar to Ravizza (1975), attempted to investigate the subjective experiences of runners who have undergone the peak experience, in an attempt to uncover the interim stages that led up to its occurrence.

Positive Addiction and the Positive Addiction State

One researcher who has attempted to shed light on the process leading to these peak experience states was William Glasser (1976). As an extension of his work in psychiatric therapy, Glasser postulated that individuals could increase their psychological strength through a physical commitment to some type of activity. He noted that after a certain period of time (minimum of six months), the process of the activity could become addictive, in that it was perceived as providing the individual with a pleasurable release from feelings associated with a low self-concept. Glasser's concept of how this occurred was called "positive addiction." It stemmed from his belief that individuals could control their mental states, and if they so chose, transform those feelings of low self-worth into more positivistic self-concepts. The easiest method of accomplishing this transformation was by becoming positively addicted to some form of physical activity. Glasser suggested that the process by which this transformation occurred was directly related to how the individual perceived the pleasure-pain substituting capabilities of a particular agent or activity. If it could provide the individual with some form of pleasurable release, one would begin to seek out its effects in much the same manner that a person addicted to heroin would seek out its effects. It appeared that the addicting power of a particular agent lay in the perceived ability of that agent to substitute pleasure for pain, and not in any inherent quality of the agent itself (Bjerot, 1972; Glasser, 1976; Peele, 1978).

The agent had become such a powerful influence on the individual's physical, social and psychological makeup that one could not or would not adjust to a life without the addictive agent. It was important to realize, however, that the long-term effects of a positive addiction were quite different from the effects associated with negative addiction. If we examined the three areas Bjerot (1972) suggested were critically influenced by an addiction process, we could more readily appreciate the difference between positive and negative addiction.

(1) Physically - As a result of the continued use of the addiction agent, the individual experienced some changes in bodily function. In instances of negative addiction, the individual would have experienced deteriorating effects as a result of the addiction. Alcoholics may have suffered from the effects of cirrhosis or malnutrition, smokers from cancer or emphysema, or food addicts from obesity. Positive addicts, on the other hand, typically experienced improvements in bodily function. Runners may have experienced increased cardiovascular efficiency, weightlifters increased muscle strength, or yoga practitioners increased flexibility.

(2) Psychologically - Negative addicts typically experienced

some form of mental depression as a result of the withdrawal of the addicting agent (Bjerot, 1972). This was quite understandable in view of the fact that the initial role of the agent was to increase their feelings of love and self-worth (Glasser, 1976). Positive addicts, on the other hand, gained permanent psychological strength from their addiction, which carried over into all aspects of their lives (Glasser, 1976:40).

(3) Socially - A deterioration in a person's social life could have occurred as a result of the negative addiction. A common scenario found the addict losing friends or family due to conduct associated with the addiction. It could have also effected a loss in status due to the nature of the addiction (gambling), or in some cases, an extreme social reprimand for activities engaged in to support the addiction (theft or prostitution). Glasser (1976) suggested that positive addiction tended to increase the strengths of social relationships as a result of associating with individuals of similar interests. It was also seen, by him, as beneficial in terms of gaining status or prestige through development of a confident and purposeful manner. At the core of "positive addiction" was Glasser's concept of the "positive addiction state" (1976). Comparable to the "peak experience" in terms of involvement, pleasure and behavioural awareness, the concept was unique in that Glasser determined certain preconditions that had to be met in order for the P.A. state to occur. These conditions were as follows (Glasser, 1976:93):

1. Whatever activity it was that the individual became involved with, it usually required about one hour per day. This time may have later become sacrosanct, in that the individual insisted on setting it aside for his (or her) activity.

2. The activity would typically pose some discomfort to the individual in the beginning, but he (or she) persisted on the conviction that it was helping oneself in some manner (e.g. yoga for flexibility, running for weight loss or cardiovascular efficiency, or weightlifting for strength or cosmetic appeal).
3. A great deal of personal initiative was required to continue the activity until one became positively addicted. Glasser suggested this usually required about six months, after which time the individual had been sufficiently trained in the activity that the mind could "spin free."[3]
4. For the addiction to become fixed, the individual must have strived for improvement without becoming self-critical. This allowed one to reach the positive addiction state often enough for the process to have had an influence over the person.
5. Glasser stressed that competition tended to make one critical of one's performance, thereby hindering any chance of reaching the positive addiction state. As a consequence, he suggested that whatever activity one was involved in, it must lend itself to singular involvement, if one hoped to achieve the positive addiction state.

As a consequence of these preparatory stages, the individual had a foundation upon which the P.A. state may have occurred. Once experienced by the individual, it exerted a tremendous influence over a person in terms of forcing its reoccurrence. Glasser suggested that the greatest impact of the P.A. state was not so much in terms of its physical pleasure, but in the manner in which it influenced the individual's mental state. According to Glasser, the mind "spins free," hooking up new neural pathways that allowed the individual to consider ideas in a new and different manner. It was this sensation, of new or transcendent meanings being attached to old ideas and thought patterns that may have been at the core of the P.A. state.

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[3] This appears to correspond to the concept presented in this paper whereby the monitoring of the participatory behaviour drops off, concurrent with heightened awareness of one's own awareness.

The positive addiction state appeared at the extreme end of the continuum proposed by the author (as illustrated in Figure 6, Chapter 3). Awareness of the participating behaviour had dropped off to minimal levels while awareness of the monitoring behaviour had sharply increased. The pleasure the individual was receiving from the activity had risen sharply to the point where the person was experiencing feelings of euphoria and extreme personal satisfaction. Involvement with the activity had reached a point where a person was almost completely unaware of the immediate surroundings. The individual's total preoccupation at that point appeared to be with the feelings being experienced.

To pass through the stages that led to the positive addiction state, Glasser (1976) speculated that the individual must have persisted for a time on the strength of extrinsic motivation until he or she developed internally motivating forces (e.g., enjoyment and personal satisfaction). This was evidenced by the first three conditions that Glasser implied were necessary for attainment of the positive addiction state. Once the runner had met the first three preconditions and had sufficient technique and fitness, the person was probably at the stage where intrinsically motivating factors would have the individual running on a long-term basis. Once the person had achieved a physical base necessary for continuation of the activity the runner must have then began to prepare psychologically, if one was to enter the positive addiction state. To do that, the individual must have aimed for improvement as a runner without becoming critical of self-performance.

Glasser (1976) recognized that achievement of the positive addiction state is physiologically and psychologically based. The physical component is: (1) a reflection of intense physical involvement devoid of pain and fatigue; (2) a level of physical skill and fitness that allows this intense involvement; and (3) a level of training within the activity that requires minimal correction and evaluation by the self. The psychological component is reflected by a gradual preoccupation with: (a) evaluating the perceived self-concept in relation to perceived ability and fitness; (b) preparing for, and anticipating the reoccurrence of the pleasurable sensations that exist as a "memory" from previous runs; and (c) analyzing and evaluating the new thought patterns that appear to occur in the context of euphoric physical sensations and intense psychological introversion. When these physical and psychological components become integrated, the individual is entering into the peak experience or the positive addiction state.

Glasser's (1976) view of the peak experience or P.A. state was altogether different from the concept of flow presented by Csikszentmihalyi (1975). Csikszentmihalyi suggested that one could be aware of participating behaviour (necessary to the manipulation of skills and/or challenges), and still have the preoccupation with one's own awareness that characterized the P.A. state . Glasser maintained that consciousness of the activity must be minimal, or non-existent, so that the mind could totally turn inward upon itself and deal with aspects of its own consciousness. It was this high degree of non-verbal introspection that characterized and isolated the peak experience (P.A. state) from other aspects of human consciousness.

During the foregoing discussion, the terms "peak experience" and "P.A. state" have been used interchangeably. This was done not to confuse the reader, only to suggest that both concepts were attempting to explain the same uppermost reaches of human involvement and enjoyment. Both authors contend that their concepts described a state of high enjoyment, high involvement, and low awareness of the participatory behaviour. To that extent the concepts were the same; to the extent each author attempted to explain the "feel" of these states, they were different. Maslow, as an existential psychologist, felt it necessary to attempt a complete description of a transcendent state for the benefit of people who may not have understood its implications. Glasser, on the other hand, was more concerned with the preparatory stages to that transcendent state, especially as they related to physical activities and hence did not elaborate to the same extent.

Ecstasy

Greely's (1974) concept of the ecstatic or mystical experience was similar to Maslow's (1970) concept of the peak experience and Glasser's (1976) notion of the positive addiction state. He suggested that the ecstatic interlude was perceived by the individual as a feeling of "intense unity with the universe and of one's place within that universe" (Greely, 1974:12). Greely denoted four characteristics which typified and defined the ecstatic experience (1974:15):

(1) Ineffability - which suggested that the ecstatic experience was a state or feeling that must be directly experienced to be understood. No amount of explanation or description could adequately convey the intensity of feeling that occurred in the ecstatic experience.

(2) Noetic quality - which referred to the clarity of the ecstatic or mystical experience. This clarity seemed to give the individual insights or revelations about oneself and one's place in the world never before conceived by the individual.

(3) Transiency - the characteristic that was common to all altered states of consciousness. They were brief and intense, leaving behind a vague awareness of their presence, but defying subsequent attempts at description.

(4) Passivity - Greely suggested that most activities one engaged in to encounter the ecstatic experience could only have set the stage for its inception. Typically, it had come when the individual was passive, not attempting to force its occurrence.

Greely also speculated on the presence of "triggers" or preconditions which promoted the inception of the ecstatic experience. These triggers did not define, or in any way characterize the experience, only opened the door to its occurrence. Regardless of the nature of the trigger, the ecstatic or mystical experience always had its own definitive nature, quite apart from the boundaries of the situation in which it occurred. If running was such a trigger, the manner in which it pre-conditioned the ecstatic experience would be different from the pre-conditions of love, painting, yoga or drugs, but once the mystical experience occurred, the resultant feelings and awareness were remarkably similar.

The essential thesis to Greely's (1974) text was that the mystical or ecstatic experience was a way of knowing or understanding ourselves and ultimately using that knowledge to define ourselves as individuals. The direction of this experience was usually positive, moving the individual toward a healthier self-concept. He did note, however, that the possibility of delusion existed in the ecstatic interlude. A weak or poorly structured personality in search of the "truths" contained in the ecstatic or mystical experience may have become involved in a deception that would ultimately lead one away from the real sources of personality adjustment (1978:83).

Sheehan's comment (1978:27) that "running changed my attitude about work and play. About whom I really liked and who really liked me," alluded to a power in the ecstatic experience that had the potential for deception. Morgan (1979:59) suggested that many runners have fallen prey to an aberrant pursuit of this mystical form of insight:

> . . . At this point he or she cannot live without the running experience. Exercise addicts give their daily run(s) higher priority than job, family or friends. They run first, and then if time permits, they work, love and socialize. Also they often exercise to the point where overuse injuries have near crippling effects, the pain becomes intolerable, and they search for the perfect shoe, orthotic, injection, or psychological strategy that will enable them to run ("shoot up") again.

The question arises as to the nature of the aberrant pursuit of the peak experience, P.A. state or mystical experience. Are they a natural consequence of involvement with such a pleasurable experience, or is it that only certain personality types are susceptible to dependence on addiction processes?

The Addictive Personality

Attitudes regarding addiction fall into two categories, depending on where the cause of the addiction is assigned. One school of thought, definitely the more traditional of the two, assumes that addiction is a function of the analgesic agent. The second school views addiction as a perceived need of the individual which one feels is only fulfilled through the use of the analgesic agent. In the first case, it is assumed that "addictive" analgesics have both the ability to alleviate pain or suffering and tie the individual to continued use through a mysterious additional component contained in the analgesic itself. The latter philosophy implies that the individual has some type of personality deficiency that makes one hyper-susceptible to analgesic effects. As a consequence the physiological effects of an analgesic agent would give a person a pleasant altered perception of oneself and the ability to handle one's life. This effect is the individual's goal when seeking out any analgesic agent.

Snyder (1977:44) in a discussion of opiate receptors, subscribed to the "additional component" school of thought:

> The goal of a non addictive opiate has remained frustratingly elusive, time and again the medical community has enthusiastically greeted the development of a supposedly non addictive opiate only to be disappointed when after enough patients have taken the drug for a long enough time it turned out to be addictive.

The process Snyder was lamenting has occurred repeatedly in the history of drug medication. Near the turn of the century when the non-medical use of morphine was reaching alarming proportions, Bayer marketed heroin tablets as a non-addictive alternative to morphine

(Szasz, 1974). Little discussion is needed on the effects of that assumption. During the 1960's, drug treatment centres in the United States proposed methadone treatment as a non-addictive alternative to heroin addiction. Again the documentation was overwhelming that instead of being a non-addictive substitute for heroin, the new drug became a viable alternative, complete with the supposed addiction property (Szasz, 1974).

Snyder's discussion at one point grappled with the question of why some drugs were preferred by addicts over others. His statements provided a clue to the real source of addiction:

> These drugs can relieve pain but presumably because of their antagonistic properties they do not seem to cause addiction as readily as pure opiate agonists . . . because they had a number of adverse side effects, they gave rise to anxiety, agitation and sometimes hallucinations (1977:47).

Recent evidence from the drug cultures pointed out that the hallucinogenic properties of drugs did not negate their use, on the contrary, drugs were sometimes sought out for their hallucinogenic properties (Szasz, 1974). What does seem suspicious about these "low addiction" drugs, was the fact that they gave rise to anxiety and agitation, the very internal states the addict was probably attempting to alleviate.

Snyder (1977:56) concluded with an interesting speculation in regard to internal opiates: "The fact that enkalphins can produce analgesia suggests that appropriate analogues {emphasis mine} may be the long sought non addictive analgesic. Surely man is not addicted to himself, or is he?"

If addiction was a function of the individual's perceived needs, it was quite possible that one could become addicted to any process that provided a person with an altered perception of oneself and the world.

Blaine (1974:15), studying the aspects of dependency defined the term dependence as a "descriptor denoting the individual's relationship to the substance usually in the context of continuing the consumption of the agent in order to maintain a physiological balance." Blaine (1974) assumed that addiction was a physiological state that dictated its own maintenance, but he did note there existed some doubt as to addiction being a purely physiological response to an analgesic agent: "Many psychologists are re-examining dependence, some rephrasing it as a heightened susceptibility to social influence or as motivation for social reinforcement" (1974:20). Blaine was acknowledging that the most powerful factor in dependence or addiction was how the individual perceived the effect the agent was having on the person's ability to cope with one's environment. It was not an inherent property of the agent that bound the individual to its use, but the individual's perception of how that agent alleviated feelings of low self-esteem (Peele, 1978).

The long-held myth that once an individual was exposed to a powerful analgesic he or she was forever in its grasp was further discounted by Ewing (1974:148) who concluded from his work on addicts that: "These findings argue strongly against the validity and general applicability of a construct such as 'craving' which implies that ingesting some alcohol triggers a sequence of compulsive drinking with an eventual loss of control." Ewing's argument against the concept of "craving an analgesic agent" postulated that the process of the addiction began with the individual. If the use of the analgesic agent was in trying to mask or alleviate problems relative to one's self-esteem or self-regard, that constituted the basis for an addiction. Ewing concluded that the power of an analgesic agent could be that it instituted a kind of "memory" of a physiological change that was somehow psychologically pleasing to the individual. For example, alcohol provides the addict with a euphoric feeling that masks feelings of low self-esteem or inadequacy. Once the effect of the alcohol begins to wear off two important processes begin to occur. Firstly, the feelings of inadequacy that predicated the drinking are returning, and secondly, the memory of how those feelings were eradicated by the consumption of alcohol becomes predominant in one's mind.

Long distance running could be predicated on similar circumstances. It can produce a physiological change that is accompanied on occasion by feelings of euphoria. These feelings could possibly mask or alter the individual's perception of oneself and the environment. After the run, when a person returns to an everyday lifestyle, there is a gradual return to the feelings of tension, anxiety and perhaps alienation that are so predominant in our society. This could rekindle the memory or the alleviating effects running has on the individual, and lead ultimately to a dependence on the running experience.

It is important to remember that dependence or addiction to any analgesic agent is a function of the perceived role of that agent. Many individuals can and do consume large amounts of the analgesic agent without becoming addicted. They can do so because they are not attempting to use the analgesic as an integral tool in dealing with their perception of self or environment and do not allow the agent to interfere with the normal functioning of their lifestyle.

Research has attempted to profile the psychological characteristics of an addictive or dependent personality, but not without encountering numerous problems. Lester, Burkham, Candica and Narkunski (1976) attempted to profile the personalities of 55 ex-addicts through the use of Edwards Personal Preference Schedule (E.P.P.S.) and the Minnesota Multiphasic Personality Inventory (M.M.P.I.). Of the 55 questionnaires completed, 24 had to be discarded because of high scores on the lie scales. Obviously the subjects were attempting to portray a certain personality profile that would present themselves in a more socially desirable manner. The fact that their lie scales were high was a reflection of their inconsistent projection of that personality type on the questionnaire.

The remaining questionnaires characterized the subjects as having high needs for achievement, autonomy and heterosexuality, and low needs for affiliation and nurturance. As with other psychological tests one must remember the subject was projecting an evaluation of oneself, consequently a high need for achievement does not necessarily mean the individual was prepared to expend the energy necessary to be an achiever, only an expressed desire to be an achiever. It is difficult in psychometric analysis to determine whether the expressed personality variable is a reflection of a desired trait or a reflection of the drive necessary to achieve that state. Regardless of this confusion, it appeared that addicts desired such characteristics as achievement and autonomy but usually their circumstances made achieving such personality characteristics very tenuous in their overall personality makeup. This discrepancy between the desired and displayed personality variables is a vacuum that apparently is easily filled by analgesic agents.

Running and Addiction

The previous discussion was intended to highlight the notion that addiction can occur when a powerful analgesic agent is pursued by a dependent personality. This review has pointed out that running can have powerful analgesic effects on anxiety, depression and related phobias or neuroses. What remains is to determine if running can serve as an addiction agent for dependent personality types. This in turn can only be examined in light of the perceived effects of running by the individual. A differentiation must be made in each case between heavy use and addiction, between complementing a lifestyle and supplanting a lifestyle. Preliminary evidence suggested that running can serve either function.

Greist, Klein, Eischen, and Faris' (1978) analysis of running as a treatment for depression cited the case history of a 28 year old female student who recounted a two-year depression period characterized by depressed mood, helplessness and a lack of meaningful relationships. Within three weeks of embarking on a ten-week running programme there was a drastic improvement in her mood. Her improvement continued until the fifth week when an injured ankle forced her to leave the running programme for three weeks. During that interim period, her mood degenerated markedly until the full effects of her depression had returned. Only after the running programme was resumed did her mood rise to pre-injury levels. A followup to the original programme indicated that she remained in high spirits and continued to run long distances.

This case analysis provided some insight into the dependence individuals can form on the running experience. Once aware that running could alleviate the effects of her depression, she pursued the analgesia of running until its effects became aberrant.[4] Once the injury had healed, she again pursued the analgesia with the intensity typical of an addiction. It appeared evident that the effects of the running experience were not being utilized to complement a lifestyle as much as they were being used as a lifestyle in itself. Obviously this individual found it difficult to cope without the assistance provided through the running behaviour. An interesting analysis would have been provided by a comparison of pre- and post-treatment levels of social interaction. This would have been extremely helpful in terms of assigning a positive or negative valence to the apparent addiction.

A study by Little (1979) on neurotic illness in fitness "fanatics," pointed out that individuals using sport as a coping and self-expression agent experienced severe "athletes neurosis" when unable to continue at a certain level in their chosen sport. The 44 subjects (males) in the study all suffered from "athletes neurosis" and were characterized in the following manner:

1) They had an excessive and often exclusive preoccupation with physical fitness.
2) They had encountered a sudden threat to their physical well being that had served to make them aware of their waning physical prowess.
3) As a result of this threat they all suffered a type of neurosis characterized by depression and anxiety (1979:49).

A few of the subjects in this study were able to recover, but the author reported that the majority remained resistant to psychological and physical therapies. Running was not as prone as most sports to this confrontation between age and continued participation, but certain variables (e.g., injury) could and did interfere with continuation of the running behaviour. The effects, if the running had to permanently discontinue, would no doubt be similar to those evidenced in Little's study.

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[4] The injured ankle was a direct consequence of exceeding the recommended mileage for that week.

Another analysis of the severe withdrawal symptoms that can arise in individuals, heavily involved with exercise, was reported by Baekeland (1970), who attempted to study changes in sleep E.E.G.'s of steady exercisers deprived of their exercise for long periods. Daily exercisers refused to join in the study despite substantial monetary rewards to do so and he finally had to settle for subjects who exercised only three days a week. He concluded, that even in this group, a month-long period without exercise led to decreases in appetite, sexual tension and a need to be with others. Running may have had some effect in supplanting or alleviating these symptoms, and when deprived of the running experience these feelings returned. Baekeland reported that his subjects had viewed the study as one of exercise deprivation more than one of exercise restriction; providing some evidence for the supposition that many more individuals were using exercise as a therapeutic device than suspected.

To date, the most insightful study of the running experience was conducted by Carmack and Martens (1979). Their questionnaire (utilized in the present study) attempted to investigate the interrelationships among commitment to running, average length of run, discomfort experienced when a run was missed and perceived addiction to running. They also utilized information gathered from the questionnaire to examine questions concerning the changing states of mind occurring throughout the run. This in turn shed some light on the "spin out" phase of Glasser's proposed positive addiction state.

Results of the study, involving 250 males and 65 females, showed that commitment to running (CR) score was higher for individuals running over 40 minutes per session than it was for individuals who ran under 40 minutes per session. This was supportive of the subjective evaluation by Kostrubala (1976) that 40 minutes of running were required for one to experience the "feeling good" stage of running at the core of the running experience. Carmack and Martens (1979) also found quite unexpectedly, that females in the study reported significantly more discomfort upon missing a run than did males; however, their levels of perceived addiction were not greater. They noted that this was unexpected in light of Glasser's (1976) notion that more strongly committed runners were more likely to experience discomfort when a run was missed. This may reflect the fact that individuals can become heavy users of running without becoming addicted; however, the fact that the difference was between sexes may indicate either a differentiation of the perceived effects of running or else a different connotative framework in regard to the word or concept, addiction. In any event, this aspect of their study served to point out that clarification of the concept of addiction was required relative to its role in the running experience. Also, correlations were required between perceived addiction, feelings experienced when missing a run and frequency of running to determine if some discrepancy existed between the stated level of addiction (if it existed) and the objective evidence provided by their reporting of their running behaviour. This may have served to outline the connotative framework from which they viewed the concept of addiction and running.

Carmack and Martens (1979) reported that when the total sample was split into those who indicated they experienced discomfort when a run was missed versus those who did not, the discomfort group scored higher on the commitment to running scale than the no discomfort group. This pointed out that those runners experiencing discomfort were in actuality evidencing withdrawal symptoms, which in turn were the classic indicators that an addiction process was in place.

They also recorded that the "spin out" phase (P.A. state) of the run predicted commitment to running (C.R.) only in the last quarter of the run. This seemed in agreement with Glasser's (1976) supposition that individuals would not achieve the P.A. state until sometime late in the run.

In summarizing their study, Carmack and Martens (1979) suggested their instrument provided a viable method of determining an individual's commitment to running. It was noteworthy, however, that commitment to running did not imply addiction to running; the individual could be heavily committed to running and not be involved in an addiction process. The converse, however, was not necessarily true; addicts probably evidenced a high commitment to the running experience.

Sachs and Pargman (1979) utilized the Carmack and Martens' questionnaire to probe that very issue. They proposed a two axis model; one indicating degree of dependence, which they assumed was psychobiologic in nature, and the other indicating the degree of commitment, characterized in their study as primarily cognitive or intellectual. The model rested on the view that commitment to running was a multifaceted phenomena composed of social, psychological and physiological factors. The time spent in thinking or reading about running, travelling to and from races, buying books, equipment and accessories, changes in eating habits and lifestyle patterns in order to allow further involvement with running were considered to be aspects of an individual's commitment to running.

Dependence upon running was assumed to have a psychological and/or physiological nature, the key ingredient being the withdrawal symptoms reported by runners when they found themselves unable to run. The four quadrants of the model, reproduced in Figure 5, attempted to categorize four types of runners found in the running sub-culture.

Questionnaires completed by 540 runners allowed the authors not only to delineate the type of individual in each quadrant but one's subsequent opportunity for movement throughout the model. The individual in Quadrant A was characterized by high levels of commitment and dependence. The authors referred to these individuals as addicted exercisers, running for the combined factors of psychological well-being and avoidance of withdrawal symptoms. Individuals in Quadrant B were dependent upon running but not necessarily committed to regular participation. Other factors in this person's lifestyle obviously took priority; running supplemented the lifestyle rather than overshadowing it. Quadrant C reflected the activity of the occasional runner, characterized by low levels of commitment and dependence leading to a running involvement based on convenience rather than any form of dependence. The individual in Quadrant D presented some problems for the hypothetical structure. According to the model, this person was highly committed to running but was not dependent upon participation. The problem arose when placing individuals in this quadrant merely on their response to one item in the questionnaire: "Are you addicted to running?" The only foolproof method of determining an addiction, if it existed, would be to have the

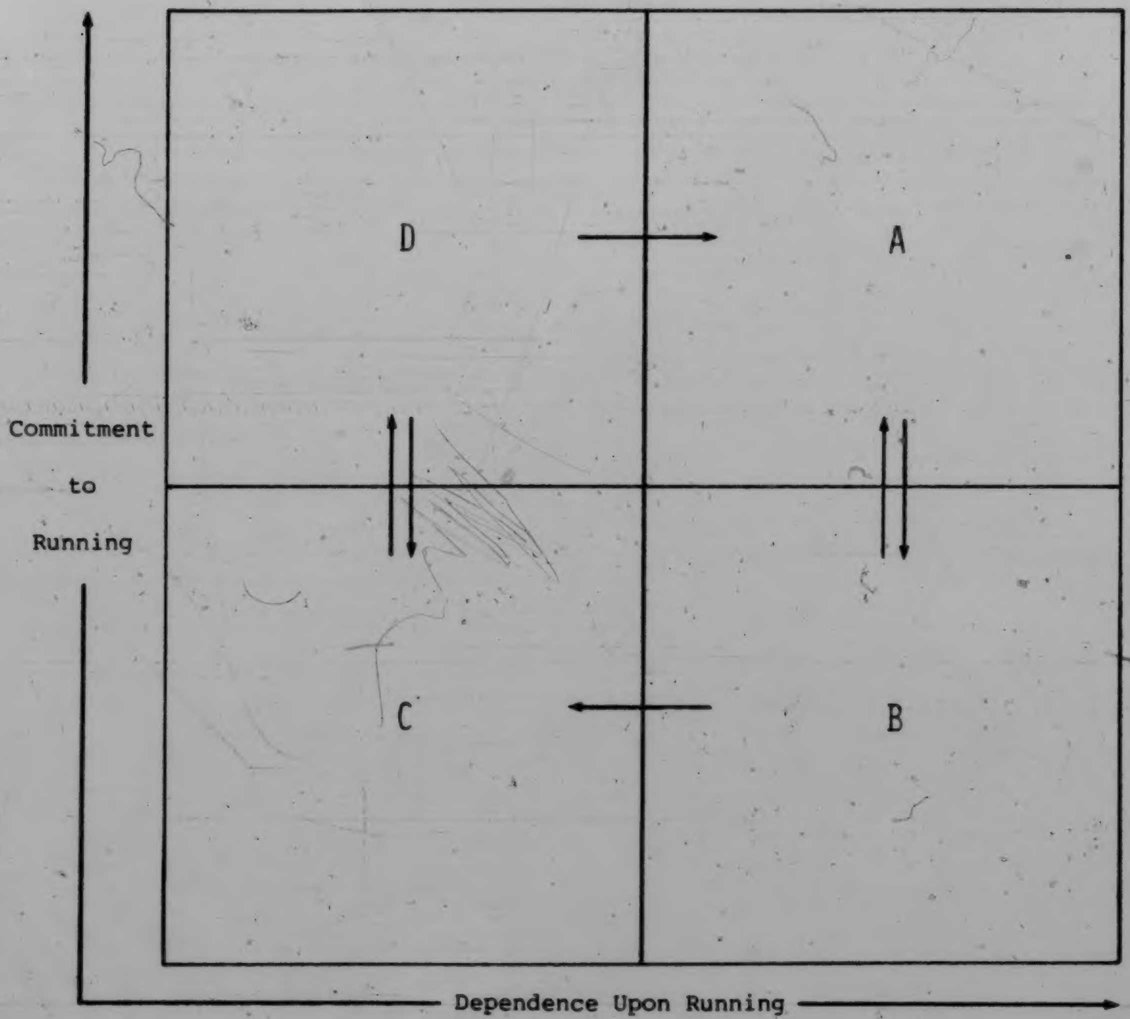
D
A
C
B
Commitment to Running
Dependence Upon Running

Figure 5. The Sachs and Pargman runner participation model. (Reprint from paper presented at the annual convention of the American Alliance for Health, Physical Education and Recreation, New Orleans, Louisiana, March 19, 1979).

individual cease running for a time. If there were some withdrawal symptoms, it could be assumed an addiction was in place prior to the cessation of activity. The negative and loaded connotations surrounding the term addiction no doubt tainted the results in this quadrant. The authors suggested that this individual may not be completely developed in relation to Glasser's (1976) preconditions for positive addiction. It seemed unlikely, however, that individuals could become heavily committed to running without a correspondingly high level of participation.

Sachs and Pargman (1979) postulated that all runners began in Quadrant C, at the lowest levels of commitment and dependence. As the commitment increased there could be an increase in dependence allowing movement from Quadrant C only to Quadrant D.[5] Movement from Quadrant D could be toward Quadrants A or C, depending upon levels of commitment. If commitment was high the individual moved towards Quadrant A (the subtle assumption being that continued high commitment fostered dependence; possibly an erroneous assumption) if commitment decreased movement was towards Quadrant C. Movement from Quadrant A could only be toward Quadrant B, as dependence would not decrease unless commitment first decreased (this statement by the authors may also be an erroneous assumption based on their view of the interrelationship between commitment and addiction).

Once having moved to Quadrant B, the individual would, within a short period of time, evidence a decrease in dependence and move toward Quadrant C. The authors, at that point, seemed to acknowledge that dependence was a fluctuating variable; however, their study failed to delineate how the individual became dependent in the running experience. This presented some confusion in the discussion of results that clearly showed the subjects fell primarily into Quadrants A and B. The unexpected results of having individuals in Quadrant B was tentatively explained as a flaw in study design that led to an oversampling of competitive runners. This was unlikely in view of the fact that most competitive runners were heavily committed to running. The unexpected numbers in Quadrant B was probably a reflection of the authors using Carmack and Martens' (1979) commitment to running scale (a 12-item scale within the questionnaire) as a reflection of dependence rather than commitment. The determination of commitment to running was assessed on the basis of the average number of days per week that a person ran. It would appear from their study that an individual who ran 15 miles per session, four days a week, would be less committed than an individual who ran four miles per session, six days a week. Assuming that the latter was more committed than the former appeared a very tenuous basis upon which to verify a hypothetical model.

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[5] Analysis by Griest et al. (1978) of the 28 year old female student mentioned previously in this section seems to suggest she moved directly from Quadrant C to Quadrant A. This is probably a reflection of a highly dependent personality that the Sachs and Pargman study failed to consider in their model.

In a further probe of addiction and running, Sachs and Pargman (1978) used a depth interview approach to examine the running behaviour of 12 adult males aged between 23 and 48 years. The interview was comprised of questions related to reasons for running, roles as a runner, importance of running, frequency of participation, emotional considerations, and exercise addiction.

The authors related that most participants viewed themselves as addicted to running, but at various levels of intensity. They also concluded that it was possible to produce a general psychological description of the exercise addict; however, individual variability made it impossible to produce sweeping generalizations regarding their involvement. They did find some similarity (generally health related) with respect to initial participation. They also suggested that intrinsically and extrinsically motivating factors were balanced in terms of initiating and continuing the running behaviour. Most of the runners agreed that running had become an important facet of their lifestyle, and that they would go to great lengths to ensure its continuation. In this regard, some of the participants could recount feelings of anxiety, tension, discomfort and irritation when forced to withdraw from running for more than 36 hours. It was interesting to note that all participants reporting withdrawal symptoms made similar comments regardless of distance, frequency or speed of their runs. This seemed to put some stress on the notion that an individual must run a certain distance, or with a certain frequency, to actually become addicted to running.

In summarizing their study, the authors felt that the depth interview approach held a great deal of promise for further investigations into the concept of running and addiction.

Summary

This review has attempted to point out the analgesic effects running can have on the reactive neuroses characteristic of an inadequately coping, or dependent personality. A subsequent analysis was attempted to delineate some of the probable causes, and perceived effects of this analgesia in regard to creating an addiction process between the individual and the running experience.

The research pointed to a gap that existed with respect to running as an addiction agent. The propensity of individuals to utilize running in this manner was seen as an outgrowth of their respective needs and their perception of the role of the analgesic effects of running. What remains for this study is to structure a methodological system capable of uncovering these relationships, if they exist, and subsequently provide data relevant to the concept that running can become an addiction agent.

Chapter 3

METHODS AND PROCEDURES

Chapter 3 is composed of seven sub-sections. In the first sub-section, there is a discussion of the merits and drawbacks of various forms of quantitative and qualitative analysis. Sub-section two outlines the data gathering techniques of participant observation, depth interviews and mailed questionnaires, and reviews the sampling procedures used. Sub-section three features the hypotheses to be tested, while sub-section four outlines related questions to the hypotheses. Sub-section five describes the proposed model of motivation; sub-section six discusses the data analysis procedures; and this chapter concludes with sub-section seven specifying the delimitations and limitations of the present study.

Introduction to the Research Methodologies

In the preceding chapter, social psychology was described as a field of study that emphasized the role of the individual in interpreting social interaction phenomena. This emphasis on the individual's interpretation of one's behaviour was reflective of the following assumptions regarding the nature of social interaction: (1) a person monitors and is subsequently the only true interpreter of one's social behaviour; (2) these behaviours are in regard to a perceived social role that the individual is in a unique position to elaborate on, and (3) these behaviours occur within a given episode, the parameters of which are determined by the individual alone (Harre and Secord, 1972).

These assumptions, though critical to the understanding of social interaction phenomena, did not obviate the role of quantitative social analysis. The present study was mainly concerned with how running as a purported addiction process could affect the individual; however, it was also of paramount interest to provide a profile of the heavily involved adult runner. The latter analysis should have helped clarify the forces that were interpreted by the individual. Without a total picture of the social forces at work on an individual as well as perception of these forces, it would be difficult to understand how an addiction process could occur. A review of the roles of each style of social research was important, in order to ascertain the nature of the contribution each methodology could make to the present study.

Quantitative Research

Quantitative research, variously referred to as objective or empirical research, has been regarded for some time as the more scientifically based form of social analysis. The foundation for this style of research lay in the gathering of large quantities (hence the term) of data amenable to various techniques of statistical analysis. Whitson (1978:11) stated that the major premise underlying this assumption was: "that only evidence which is available to the senses in object form can settle disputes conclusively." He suggested that this axiom provided the necessary link to the natural sciences that would allow the social sciences to adopt the scientific method. As a consequence of focussing only on observable behaviour, it became possible to tabulate and categorize these on the basis of frequency rather than on the basis of individual interpretation. Numerical relationships established through surveys, questionnaires and large sample studies allowed quantitative analysts to establish what they considered to be the underlying laws or rules of behaviour.

Walsh (1972) suggested that this tendency to predict or explain individual behaviour from patterns uncovered in large sample studies was based on three erroneous assumptions: (1) That social phenomena were, for all analytical purposes, qualitatively the same as natural phenomena; (2) that the techniques of analysis developed in the natural sciences were applicable to sociological investigation; and (3) that the aim of the social sciences was to produce a system of high level, empirically grounded, theoretical propositions which would provide the basis for predictive statements about social phenomena (1972:16).

These assumptions reflected the perceived similarity between natural and social phenomena mentioned earlier by Whitson (1978), but as Walsh (1972) pointed out later in his discussion, social phenomena had an intrinsic meaning that natural phenomena did not. Natural scientists were free to give their data interpretations based only on paradigmatic relevance, that is, they could observe the data and construct theoretical frameworks without requiring an interpreter to explain the meaning of the data. Social scientists, on the other hand, collected their data through an interpreter, and as such, it was intrinsically meaningful to another individual before it reached the social scientist. The implication was that the researcher should have sought the subjective interpretation of the data before attempting to analyze it. If one had not attempted this interim step one might have begun treating behaviour irrespective of the individuals who produced it and ultimately perceived a social world as an entity apart from the individuals who comprised it.

This was not to suggest that quantitative research had no place in analysis of social interaction phenomena. Many social scientists have argued convincingly that the true role of social research was to outline and explain to individual members the behavioural patterns operating within a particular society. This became essential in the modern world where many individuals felt alienated from the society within which they worked and lived. Better comprehension of the interaction patterns at work in large complex societies could only help those individuals in the pursuit of a more fulfilling lifestyle.

Qualitative Research

Qualitative research proposed that behaviour was a subjective interpretation of the meaning of antecedent behaviour rather than a function of some inherent quality of the antecedent behaviour. Harre and Secorde (1972:132) expanded on this rationale in the following statement:

> Since the giving and grasping of meanings is the mechanism of much of the patterns of social interaction, greater precision of the delineation of meanings is what corresponds in the social sciences to the development of greater accuracy in the physical sciences.

This style of research typically approached the individual to allow opportunity to explain why one authored a particular response or pattern of behaviour. The ensuing explanation could have been criticized on two accounts; firstly, it was subject to hindsight and the failings of the human memory, and secondly, it lacked the verification some social scientists would suggest were necessary for proper scientific research. The first criticism had some validity, depending to a large degree on the experience the researcher had with the behaviour in question. One should be attuned to the situation and thus be in a position to "negotiate" a more accurate account with the individual. Even if the individual persisted in a personally biased interpretation of one's own behaviour this was still useful to the researcher because it reflected how one individual had chosen to deal with particular aspects of social interaction.

The second criticism was loosely based on the hypothetical-deductive paradigm of the natural sciences where fewer variables were at play and consequently somewhat easier to control. However, in social science research, both the individuals involved and the situations they were involved in changed constantly, so it was difficult, if not impossible to duplicate the situation or the individuals involved. Walsh (1972:33) suggested that instead of speaking in terms of verification, social scientists should speak in terms of providing an "adequate social account" of social interaction phenomena:

> That is, it must be an account of members' actions in terms of social meanings (the criterion of subjective interpretation) and the meanings must be those actually used by members to categorize those activities and can be recognized by them as such (the criterion of subjective adequacy).

Triangulation

Denzin (1978:340) defined triangulation as "the combining of multiple methods, data types, observers and theories in the same investigation." Combining multiple strategies in the same investigation was based on the assumption that the net effect would be one of minimizing the inherent weaknesses of the separate methodologies while maximizing their inherent strengths. The previous discussion, for example, pointed out that field methods were of limited use when attempting to measure the opinions held by a large population, but were inherently superior when attempting to investigate unverbalized normative patterns of small groups. Combining the two techniques in one study allowed the investigator a broad base of information, while at the same time providing an instrument capable of assisting in the interpretation of the data.

Seiber (1973:1336) suggested that information gathered in the course of fieldwork could assist in the analysis and interpretation of survey data in several ways: (1) the theoretical structure that guided the analysis could have been derived wholly or largely from qualitative fieldwork, (2) certain survey results could have been validated to some degree by recourse to observations and informant interviews, (3) statistical relationships could have been interpreted by reference to field observations, (4) the selection of survey items could have been based on field observations, (5) case studies that illustrated statistical and historical types were supplied by field protocols, and (6) provocative by puzzling replies to the questionnaire could have been clarified by resorting to field notes.

The present study utilized a triangulation of methodologies in the manners described by Denizen (1978), Hovland (1959), and Seiber (1973), wherein it was felt the method of triangulation should include observation on the part of the investigator, informant interviewing and survey techniques. A discussion of their inherent weaknesses and strengths is presented in the following section.

Data Gathering Techniques

Participant Observation

The purpose of participant observation studies is to allow the researcher to study first-hand, the workings of a particular group, so that ultimately one can predict other similar episodes of human behaviour. By attaining some kind of membership in, or close attachment to the group of his or her interest, the researcher attempts to share the outlook, attitudes and world view of that particular group. The researcher may even become somewhat resocialized as a result of learning new phraseology or modes of behaviour. The end result is that the researcher gets a feel for group members and group goals, which in turn allows one to explain and interpret the experiences and goals of the group and its members.

Vidich (1955) stated that participant observation was essential to all social sciences that depended to any degree on understandings or meanings, especially in reference to the language in which exotic viewpoints were expressed and the point of view that the language was reflecting. This in turn was predicated on the assumption that the different roles that one utilized in different situations were definitive, both by the overt actions of the individual and the explanations of one's own behaviour.

Participant observation studies are usually of two varieties depending upon the extent to which the researcher wants to conceal the role ~~as a~~ group member. As a complete participant, the investigator sets about to become a legitimate member of the group completely covering up his or her real role or purpose in the group. The advantage to this style of research is that the author may obtain knowledge that would normally be inaccessible. Understandably, there are ethical arguments against this style of research. Playing the role of a complete participant also makes it difficult to record conversations and events as they happen without betraying one's real role in the group. Another limitation of this method is that it is difficult to question the workings of the organization without giving away one's purpose.

As a way of countering the aforementioned limitations many researchers use the second style where the participant is an observer and known to the group within that role. Characteristically, the researcher tries to establish a network of informants who will discuss the inner workings of the group. One of the major problems associated with this style of participant observation is finding and establishing confidants who can reliably interpret the events or workings of the group. Whyte (1943) who did much to popularize this style of research, expressed a concern throughout his investigation of remaining detached from the decision-making process of the group and maintaining his role strictly as an observer. Maintaining this distance forced him to depend upon individual interpretations of group procedures, which he felt at times, limited his study.

Participant observation studies have been criticized because of their apparent lack of control and their tendency to reflect the bias or particular view that was at the core of the group. Kahn and Cannell (1968:151) defined this bias as a "systematic tendency to make errors in the same direction, that is to overstate or understate the true value of an attribute." However, this concept of the true value of an attribute was open to interpretation. Obviously, true values were specific to groups and cultures; the very value of the participant observation study was to uncover and present the "true value" of an attribute as it related to the particular group. Wax (1968:239) expanded on this point by suggesting:

> The bias that some critics refer to is precisely what the researcher is trying to become capable of assuming and understanding. Reflecting this bias can be the soul of the study, remaining unbiased totally may reflect a degree of incompetence in penetrating or becoming a member of that group.

She went on to state that it was not necessary to eliminate the error or bias in the participant observation study, but to assess its nature, degree and cause. She maintained that of all the styles of research this bias could be detected easily, unlike the more subtle bias found in surveys. Surveys themselves could only be efficient when the scholar who devised them was aware of the intrinsic attitudes and argot of the particular group that would be subjected to the survey. Without this prior knowledge of the group or culture, the researcher could have been accused of designing a highly reliable instrument that failed to measure the particular factors it was designed to measure. An argument may also be presented for the fact that participant observation studies should act as reliability checks on the content of the survey itself. Perhaps the most valuable role of participant observation studies remains in uncovering hypotheses or formulating problems that are amenable to treatment or investigation by other methodologies.

Participant Observation in the Present Study

This latter role constituted the primary use of participant observation in the present study. Since the primary focus of the investigation was to uncover factors relevant to the proposition that running could formulate an addiction process, it was felt that an understanding of the normative patterns of running groups was essential in terms of understanding the powerful influence running had on many individuals. Secondly, the running experience did not happen in a vacuum but was subject to the influence of other committed runners.

The nature of the running sub-culture gave rise to many small groups bound together primarily by similar running ability and interest in the sport. The members of these groups tended to affiliate mainly for the purpose of running, disbanding once the experience was over. On the long-term, the group was quite cohesive and friendly, meeting regularly to change clothes, run, shower and engage in esoteric conversation relative to running.

Infiltrating these groups was accomplished in basically two ways. Firstly, by being a long-time runner, the author was on a friendship basis with many devoted runners who were willing to allow the author temporary membership in their running group. This membership was such that the group as a whole knew the researcher's purpose, but far from inhibiting any conservation this seemed to provide a basis for in-depth analysis of every aspect of running. It should be mentioned at this point that runners appeared to be very evangelical in their approach to running and exhibited little restraint in talking about their personal involvement with running. The groups themselves were located throughout the province of Alberta, usually in the larger centres of Edmonton, Calgary, Red Deer and Grande Prairie. Obviously this limited the time frame within which membership was maintained in the group and undoubtedly posed some restrictions on the generalizability of the data obtained.

The second method of infiltration was accomplished by membership in the Chasquis Running Club situated in Edmonton.[6] In many instances, being an identifiable (T-shirt) member of the Chasquis Running Club provided an avenue for introduction to running groups having at least one Chasquis member in the group. This was usually accomplished by approaching the member with the researcher introducing himself as a new member of the club interested in meeting other members. Typically the author was allowed an opportunity to run with the group if only on a temporary basis. This was usually brought about inadvertently by the author's inability to keep up with several of the groups. Many of the groups that Chasquis members belonged to were highly competitive, and capable of training beyond the ability of the author. In these situations, the utility of participant observation was minimal so depth interviews were conducted to obtain information relative to these individuals and their running involvement.

Entry into running groups was usually accomplished in the locker rooms or warm-up areas surrounding the Physical Education complex at The University of Alberta. Conversation and interaction with the group members were limited to the following phases: (1) changing into running gear; (2) warming up for the run; (3) early stages of the run; (4) warm down; and (5) showering.

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[6] The author joined the Chasquis Running Club in September 1979 by asking a member on The University of Alberta campus the procedures for obtaining membership. It required sending a $5.00 entry fee to the President (Peter Parker) requesting that your application for membership be accepted. Upon acceptance, which seemed routine, the new member could order T-shirts or racing singlets for an additional $4.00.

A great deal of information was also garnered by asking advice on injuries, equipment, training techniques and race strategy. Questions such as, "What kind of shoes would you recommend that I buy?" or, "I'm having a slight problem with Achilles tendonitis, what do you recommend for treatment?" always provided the foundation for a lengthy discussion of running involvement.

Depth Interviews

As previously mentioned, there were aspects of the running culture that remained outside the scope of a participant observer study. Certain groups of runners that trained at high levels of intensity and frequency were beyond the expertise of the author; however, their experiences with running were necessary if the present study was to investigate the relationship(s) that existed between addiction and all levels of running involvement. In order to facilitate direct access to the experiences of the high intensity runner, a focussed interview predicated on the following format was utilized: (i) It took place with individuals who had been involved with or were to some degree familiar with the concept under investigation; (ii) It referred to situations that had been analyzed by the interviewer prior to the interview. In other words, the interviewer had familiarized himself with the subject area to the point where comments from the respondent could fit into the larger concept without confusion; (iii) It proceeded on the basis of an interview guide that specified topics related to the research hypotheses; and (iv) It focussed on the subjective experiences regarding the situation under study (Nachmias and Nachmias, 1976:101).

These characteristics were closely adhered to in the present study. All individuals were known to have run over 35 miles per week, on a regular basis, for at least six months prior to the interview. All had experienced, during their running careers, an attachment of some kind to the sport of running, and were quite familiar with the jargon related to running highs and perceived addiction. The format of the interview was a series of open-ended questions which allowed the respondent to expound to one's own satisfaction. At times interviewees would digress; when this happened it was not discouraged in any way, and while this substantially increased the length of the interview (average interview being two to three hours), it did provide a richer commentary on this level of the runner's world. Kahn and Cannell (1968:155) discussed the rationale for this type of format and suggested the following as a basis for the use of open-ended questions:

> If the interviewer's objectives go beyond description and include explanatory aims such as discovering the respondent's particular frame of reference, or the process by which he came to his present views; an open question will almost certainly be superior to a single closed one, and perhaps to a combination of several closed questions.

Certain questions also reflected an emotional loading that was somewhat typical of attributions made of the running experience. For example, "Do you regard yourself as addicted to running?" may carry with it all the negative connotations usually ascribed to addictions; however, the fact that such phraseology was becoming common parlance in the running sub-culture forced the examination of how runners perceived themselves in relation to an addictive process.

The major criticism of the use of interviews concerned the question of reliability and validity. Kahn and Cannell (1968:162) commented on both of these aspects of depth interviews: "To the extent to which the standardization is obtained however, the interview loses its unique potential and assumes both the guarantees and the limitations which characterize psychometric standardization." In reference to validity they commented (1968:162):

> The substance of an interview may not be pertinent to its purpose. This paradox is possible because the purposes of the appraisal to which the interview is applied are often poorly defined. Sometimes the interview must both explore and assess, so that the interview has the confounding task of defining its own purpose.

However, this was not suggesting that a degree of reliability and validity acceptable to scientific investigation could not become part of the depth interview. If the concepts in question were attacked from several directions then a higher degree of validity was possible. This in turn was predicated on both the interviewer and the respondent having a common frame of reference in regard to the concepts being investigated. Furthermore, if the respondent could have been motivated to deal constructively with the questions and concepts, his efforts would have ensured a higher degree of validity for the interview.

Depth Interview Subjects

All 15 of the interview subjects recruited for the study met or exceeded the five pre-conditions for positive addiction outlined by Glasser (1976) earlier in this study. As mentioned previously, the subjects were running a minimum of 35 miles per week and had been doing so for at least six months prior to the interview. They were recruited primarily through a "snowballing" effect, wherein running friends of the author knew the whereabouts of a certain heavily committed runner.

Contact was usually made by telephone, with the author introducing himself and briefly stating how he had acquired the individual's phone number. Following this, the researcher briefly outlined the nature of the study, describing it as an investigation of heavily committed runners and their feelings about running. A convenient time for the interview was agreed upon and the conversation was concluded. In many cases the potential interviewee offered to drive to The University of Alberta to meet the researcher. In certain cases this was accepted in deference to the nature of the individual's work or his place of residence.

The interview was based on 16 questions (Appendix C) related to a history of their running behaviour, their experiences with altered states of consciousness while running, and finally the extent to which running had influenced their lifestyle. The interview was usually conducted in private, either at the individual's place of work or at The University of Alberta. The few minor intrusions seemed to pose no problems for either the interviewer or the respondent. In fact, the only problem (if it could even be considered a problem) that was encountered in the interviews was in terms of concluding them. Invariably the respondents talked on and on about the nature of their involvement; apparently welcoming the opportunity to sit down and discuss the nature of their own involvement. The interviews themselves were conducted during the months of September 1979 to May 1980.

Mailed Questionnaires

Although a mailed survey does not provide for the clarification possible through the depth interview, it does cover a broader base of respondents and is standardized so that statistical analysis can be utilized. It is also generally quicker and cheaper than other methods of data collection but highly dependent on an adequate response rate as a measure of its validity. Should the response rate be extremely low (five to twenty percent), then the design of the questionnaire, as well as the efforts of the researcher must be questioned especially in relation to any generalizations made from the data (Lundberg, 1929:208).

The mailed questionnaire also avoids many of the personal problems associated with the interview. Unlike the interview the survey allows the respondent time to analyze the question free of the sometimes intimidating presence of the researcher. It usually guarantees anonymity so that, theoretically, responses are uninhibited and more accurate. It also allows embarrassing or personal questions to be included in the questionnaire with reasonable assurance they will be answered truthfully.

There are, however, several limitations to the mailed survey, aside from the vital question concerning a low response rate. Moser and Kalton (1971:177) outlined five of these limitations: (1) The method could only be considered when the questions were sufficiently simple and straightforward to be understood with the help of printed instructions and definitions; (2) the answers to a mailed questionnaire had to be accepted as final, there was no opportunity for further probing of the data supplied; (3) the mailed questionnaire was inapparopriate where spontaneous answers were wanted or where it was important that the views of one person only were obtained, uninfluenced by discussion with others; (4) when the respondent filled in the questionnaire the respondent saw all the answers and as a consequence, answers could not be treated as independent responses; and (5) with a mailed questionnaire, there was no opportunity to supplement the respondent's answers by observational data.

Survey Instrument and Description of Respondents

The present study used a survey questionnaire designed by Carmack and Martens (1979) to analyze the running behaviour and commitment of runners across a broad spectrum of ability and interest levels. As a supplement to the participant observation study and depth interviews, it provided descriptive information relative to a wider base of the running subculture.

The instrument (Appendix B) was composed of five sections as follows:

Section 1 - general information concerning the individual's personal background

Section 2 - information relative to the running history of the individual

Section 3 - the states of mind occurring throughout the run

Section 4 - the individual's feelings about running, which were interpreted as their commitment to running (CR) score

Section 5 - the outcomes derived from the running experience.

The questionnaire was accompanied by a covering letter (Appendix A) explaining the purpose of the survey and a self-addressed, stamped envelope. They were distributed in the following manner: (1) 70 questionnaires were mailed to all members of the Chasquis Running Club, (2) 25 questionnaires were distributed to runners whom the author had run with during the participant observation phase of the study, and (3) 45 questionnaires made available at facility outlets on the Universities of Calgary and Alberta campuses. In all, 130 questionnaires were distributed in the Edmonton and Calgary areas between December 1979 and January 1980.

Hypotheses

Hypotheses are pre-conceived statements about reality that are amenable to scientific investigation. The present study focussed on exploring two inter-related hypotheses suggested by Glasser's (1976) work on positive addiction. It was also within the parameters of the present investigation to consider several questions relative to the postulation that running was an addiction process. Their roles were seen as supplemental to the primary investigation and yet crucial to an understanding of the running experience.[7]

Hypothesis I

The primary hypothesis tested in this study stemmed from Glasser's postulation that runners may have become positively addicted to the running experience and as such, tended to repeat the activity on a regular basis. At the core of Glasser's concept of positive addiction was the positive addiction (P.A.) state, which was similar to the peak experience espoused by Maslow (1970), in terms of involvement and awareness. Glasser (1976) stated five pre-conditions that had to be met before an individual became positively addicted to running. These pre-conditions, outlined in the previous chapter, were explored through the triangulation of methodologies discussed in this chapter; the purpose of which was to determine if runners meeting these pre-conditions evidenced a state that could be referred to as positive addiction. This in turn rested on an interpretation of the state of addiction. Was it an inherent quality of the activity, which eventually controlled all who ran, or was it a reflection of the personality needs or structure of only certain individuals and as such a phenomena that only a few runners experienced?

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[7] These questions have been suggested by various authors in the review of literature (Chapter 2).

The study also attempted to verify the role of the positive addiction state or peak experience in terms of its power in guiding the individual towards, or involving the individual in an addiction. The interview situation had been focussed so as to provide as much information as possible relative to each runner's involvement with the peak experience or P.A. state which Glasser maintained was at the heart of positive addiction.

Hypothesis II

The secondary hypothesis was tied to the assumption that the peak experience or P.A. state formed an intrinsic motivation to the activity of running. If this assumption was valid, then the peak experience or P.A. state was high in enjoyment and pain substituting qualities; otherwise, it would not have the addiction power Glasser ascribed to it. It also implied that all individuals who evidenced some form of addiction to running, did so because of their frequent encounters with the peak experience or P.A. state. This author's proposed model attempted to outline these changes occurring within the individual as one moved from boring to enjoyable activities. The model was based on an interaction of three variables: (1) awareness of self; (2) involvement with the activity; and (3) pleasure derived from the activity. The proposed interaction should have been duplicated by the runner's experience as he moved from what was perceived as a mundane activity to ultimately what may have been perceived as a peak experience sometime during the run.

Related Questions

Questions Relating to the Effects of Running[8] on the Personality or Psychological Makeup of the Individual

There was a degree of speculation among some authors that running could have had a therapeutic effect on the individual and ultimately provided that individual with the psychological impetus to make changes to his or her basic personality structure (Glasser, 1976; Gontang, 1977; Kostrubala, 1976; Sheehan, 1978; Spino, 1976).

A-1: Are runners using running to cope with feelings of alientation?

A-2: Does running help re-establish one's identity?

A-3: Are there profound psychological alterations in one's perception as a result of running?

A-4: Does running lead to positive changes in other aspects of one's lifestyle?

A-5: Does running help to reduce depression or anxiety?

A-6: Does running lead to heightened self-esteem?

A-7: Is there a personality change that accompanies increasing levels of running behaviour, particularly an early shift to extroversion followed by a shift to introversion?

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[8] In the context of the present study, the term "running" refers to distance running carried out on a regular basis. The term "jogging" has not been used in the present study because of the confusion that could arise in terms of delineating between "runners" and "joggers." As a consequence, any movement, regardless of intensity, that has both feet off the ground simultaneously can be considered as running.

A-8: Do highly committed runners shift from extrinsically to intrinsically motivating factors?

Questions Relating to the Physical Effects of Running

Most studies of running behaviour suggested that runners began their sport primarily for health-related reasons (Carmack and Martens, 1979; Sachs and Pargman, 1979). There was, however, some uncertainty as to how the increases in physical performance were perceived and utilized by the individual.

B-1: Do runners feel they are achieving positive physical carryovers from their running?

B-2: Are runners more active in other spheres of their life as a result of their running (e.g., social)?

B-3: Do runners who begin running at the lowest levels of physical conditioning achieve the highest psychological boost to their self-concept?

B-4: Does running affect changes in the individual because of perceived physical improvement or because of psychological distraction?

Questions Relating to Altered States of Consciousness

Researchers have stated that the core of the running experience may have been its inherent ability to trigger altered states of consciousness in the runner. These altered states may have involved shifting the individual's focus away from one's everyday world and allowing the mind to passively contemplate the more spiritual aspects of one's existence (Csikszentmihalyi, 1975; Glasser, 1976; Greely, 1974; Sheehan, 1978; Spino, 1976).

C-1: Do only the best runners experience altered states of consciousness?

C-2: Do the best runners experience altered states of consciousness on a regular basis?

C-3: What level of runner achieves and maintains a state of flow?

C-4: Is the altered state of consciousness a desired and sought after goal of the running sub-culture?

C-5: Are altered states of consciousness a natural part of the running experience or a reflection of the personalities of certain individuals or personality types?

C-6: At what stage(s) of the run do altered states of consciousness appear?

C-7: Is there a correlation between altered states of consciousness and length of run?

Questions Relating to the Running Sub-culture

Certain characteristics of the running experience made it resistant to the tightly knit, cohesive structure common to most sub-cultures. Its members did not have to meet at a common venue to participate in the experience. On the contrary, the hierarchies of ability that were so pronounced in the runner's world made the association of many of the members subject to ability alone. Due to this encouraged differentiation, the sub-culture was characterized by numerous small groups bound together by the common tie of the running experience. The nature of this loose association posed many questions for this researcher.

D-1: What are the ties that hold the different levels of ability together and how do they operate?

D-2: Are runners critical of individuals who do not ascribe to their concern with running? In essence, are there feelings of an "out" group and an "in" group on the part of the running membership?

D-3: What is the level of social integration of those individuals with high levels of running behaviour?

D-4: What is the demographic profile of the committed runner?

D-5: How do views of the sub-culture differ between highly committed and less committed runners?

Questions Relating to the Postulation That Running Can Form an Addiction Process

The idea that running could form an addiction process rested primarily on the individual's perception of the analgesic properties of the running experience. Using running to supplement a lifestyle could be considered a positive addiction; however, should running become a substitute for a large part of the individual's lifestyle its net effect may have been that of a negative addiction (Glasser, 1976; Morgan, 1979).

E-1: Can running become an addiction replete with withdrawal symptoms, and if so, does it correspond with the process outlined by Glasser?

E-2: Are the most committed runners the ones who experience the most discomfort when a run is missed?

E-3: Is there a relationship between perceived addiction feelings when a run is missed, and frequency of running?

E-4: Is there a relationship between the frequency of altered states of consciousness and perceived addiction to running?

E-5: Do individuals who experience discomfort when missing a run, rank high on the commitment to running scale?

E-6: Do perceived addicts rank high on commitment to running score?

Proposed Model of Motivation Relative to Hypothesis II

Hypothesis II suggested that if the positive addiction state or peak experience was a pleasurable state at the core of the running experience, then individuals highly committed to running should have had familiarity with these states and continued running on the basis of their perceived effects (Glasser, 1976). How these states occurred and how they affected the individual's perception was incompletely researched in the literature. This author proposed a mdoel that served to explain the process of intrinsic motivation, especially in reference to the running experience. Its verification was deemed appropriate within the context of the present study.

The enjoyment that an individual experienced in a physical activity was a function of the following processes. Firstly, the involvement with the activity had to become heightened to the point where perceptual focus was highly selective to that activity. Secondly, awareness of self had to become less dichotomous in function, that is, instead of monitoring both the participatory behaviour and its own monitoring behaviour, the self then became solely concerned with the activity (Harre and Secord, 1972). The relative interplay between these two processes was what determined our interpretation of the relative enjoyment inherent in an activity. Figure 6 and the following discussion are intended to clarify these relationships.

Humankind is unique because of the two levels of one's consciousness. We share with the lower animals the ability to monitor performance, adjusting and correcting in response to environmental cues. However, in conjunction with this ability, one is also capable of "monitoring one's own monitoring" or of being aware of his or her own consciousness. Simply stated, a human being has an awareness of oneself above a simple awareness of personal performance. This capability allows us to evaluate and mentally reflect on the nature of the performance at the same time as we are controlling the performance.

The graph in Figure 6 is an attempt to illustrate how these processes interact as the individual moves from boring or tedious activities toward more enjoyable activities. During tedious activities, the individual typically experiences low pleasure levels; one must, however, maintain some degree of involvement with the task if one is to see its completion. As a consequence of personal low levels of pleasure and involvement, awareness of self is highly dichotomized, that is, the awareness centres not only on the monitoring of the participatory behaviour but also on the monitoring behaviour. The individual's perception of this process is that one can complete the task and concurrently allow the mind to wander.[9]

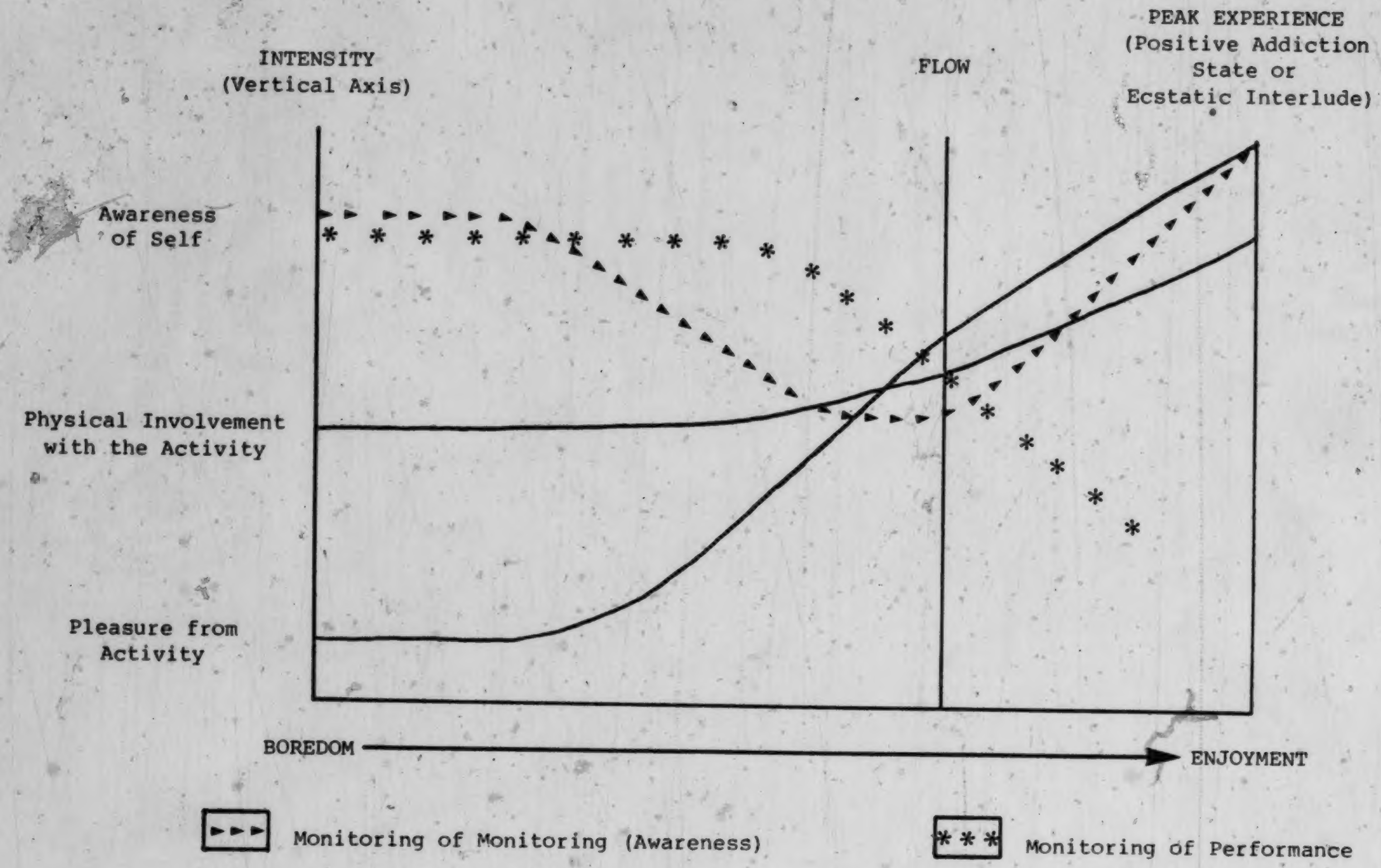
INTENSITY
(Vertical Axis)
FLOW
PEAK EXPERIENCE
(Positive Addiction
State or
Ecstatic Interlude)
Awareness
of Self
Physical Involvement
with the Activity
Pleasure from
Activity
BOREDOM
ENJOYMENT
▸▸▸ Monitoring of Monitoring (Awareness)
*** Monitoring of Performance

Figure 6. Proposed model of intrinsic motivation.

At this stage, the driving force necessary to allow completion of the task was typically provided through external motivators. A summary example occurred in the context of assembly line work. Here the individual found that the task did not involve the individual to the degree that one's perception of self could become unitary. The person typically proceeded with the task, allowing one's mind to speculate on the varied types of enjoyment that the money one was earning (external motivation) could provide for oneself in another situational context.

As one approached activities of higher enjoyment, a new pattern began to emerge. The pleasure the individual received from the activity was rising, relative to the individual's involvement. Simultaneously, awareness of self became less dichotomous in function and more closely attuned to the situation at hand (less monitoring of the monitoring behaviour). At that point, intrinsic motivating factors were beginning to provide the drive necessary for the completion of the task at hand. The individual perceived that he or she was enjoying the task and no longer relied on external sources of motivation to provide the driving force necessary for the completion of the activity.

At the extreme end of the continuum, individuals were highly involved and experiencing a great deal of pleasure from the situation. What was unique at that stage was that the awareness of self had become singular in purpose. The monitoring of the participatory behaviour had dropped off while the monitoring of the monitoring behaviour was extremely

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[9] The graph attempted to illustrate this dichotomy by having two lines portray awareness of self. The stars graphed the monitoring of the performance, the arrows graphed the monitoring of the monitoring process (awareness of consciousness).

high. This statement may appear paradoxical in that it was suggesting the individual was monitoring a process that no longer existed (i.e., the participatory behaviour no longer required monitoring). In fact what reportedly happened was that the participatory behaviour became unimportant to the degree that the mind appeared to spin free, attuned only to its own awareness, unencumbered by any evaluation or monitoring of performance.

Obviously, for this type of process to occur the participating behaviour had to be learned to the extent that constant evaluation and correction of performance was no longer necessary.

The individual had to become so familiar with the activity that through a unique process of psychological change the self could then concentrate solely on its own awareness, paying only minimal attention to performance in the activity. It was possible that in certain types of sport activity, running being an example, the individual proceeded through all of the stages during a particular episode. It was also possible that in the early stages of the run, extrinsic motivating factors were at work. The individual had not yet felt attuned to, or involved in the activity to the extent that intrinsic motivation could provide the necessary drive. As one proceeded in the run, it was probable that involvement and enjoyment in the run began to rise. The "memory" of this involvement and enjoyment may have provided the extrinsic motivation necessary to drive the person on in the run until intrinsic motivations again came to the fore. As mentioned earlier, it was likely that psychological and physiological changes occurring during the run provided the basis (mood change) upon which the individual based one's feelings of involvement and enjoyment. These feelings of involvement and enjoyment were probably the core of the running experience and served as prime motivators for individuals highly committed to running. Obviously these enjoyment factors were not present in every run; however, in the context of long-term running behaviour, they must have come to the fore often enough for the individual to perceive that running was an enjoyable and worthwhile activity.

The present study attempted to verify the model through a series of depth interviews with individuals exhibiting high levels of running behaviour. Discussions with these individuals allowed for clarification of the stages that runners go through in the context of their typical run, as well as providing evidence relative to the assumption that high levels of enjoyment (peak experience or P.A. state) were central to a runner's continuance in running behaviour.

Procedures for Data Analysis

In view of the fact that data collection has been facilitated through a triangulation of methodologies, it was fitting that data analysis reflect the underlying philosophy of each methodological tool. The following section attempted to outline the rationale for each style of data analysis, as well as present the particular techniques employed in this study.

Qualitative Data Analysis

The value of qualitative data collection was presumed to be in its ability to probe concepts such as positive addiction to much greater depths than afforded by quantitative procedures. Since the type of data gathered was mainly experiential or anecdotal in nature, predictive statements were somewhat tenuous, largely because of the method's inadequacy in accounting for many of the extrinsic variables.

Lindesmith's (1968) classic article on opiate addiction has been criticized on this basis because it did not permit prediction that a specific person would become an addict or that a specific situation would produce addiction. In defence of naturalistic analysis, Lindesmith (1968:132) stated that it:

> attempts to frame causal explanation in terms of universal statements or propositions. They assume their causal models hold true until negative cases are located. These causal statements are arrived at through the analytic induction[10] method which proposes that progressive formulation and testing of hypothesis be made through observational processes. As negative cases appear, an attempt is made to assimilate these into an emergent hypothesis. If negative cases cannot be explained a revision of the hypothesis is demanded.

The role of participant observation data in this study was in discussing dimensions of the running sub-culture. Analysis of Glasser's (1976) postulation relative to positive addiction in runners was examined from information supplied through depth interviews with heavily committed runners. It was assumed that Glasser's model was a viable one, conditional upon its ability to assimilate any divergent findings that may have arisen. The 16 questions that comprised the depth interviews were answered from the viewpoints of each of the 15 subjects. In this manner, divergent findings could be analyzed and discussed in the context of each individual's experiences.

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[10] Analytic induction refers to a type of analysis in which the dependability of the analysis rests not on the sheer number of examined instances, but rather on their variety, the extent of one's knowledge of each of them, and the circumstances presented by each.

Quantitative Data Analysis

The questionnaire constructed by Carmack and Martens (1979) was used in the present study to obtain information relative to the demographic and psychometric profiles of runners at all levels of involvement as well as to ascertain some measure of their addiction to running. The statistical procedures related to these measures are presented below.

Frequency distributions. A frequency distribution was utilized to gather information on the demographic background of all classes of runners, male and female, and to provide directions for further statistical treatment.

Computation of commitment to running score. Presented in the questionnaire as part four, this section analyzed how individuals felt about their running. Subjects responded to each of 12 items on a five-point scale indicating the degree to which it described their feelings about running. Scores could potentially range from 12 (low commitment) to 60 (high commitment).

Variance analysis using commitment to running score as the dependent variable. Glasser's (1976) concept of positive addiction suggested that addiction to running would be predicted by the average length of an individual's run, the discomfort experienced when a run was missed and one's perceived addiction to running. In accord with this assumption, these three independent variables were treated as discrete in a series of variance analyses where the dependent variable was commitment to running (C.R.) score.

Factor analysis of the state of mind items. Section three of the questionnaire listed 22 items that described the state of mind during the run. Subjects were asked to indicate to what extent (almost never, sometimes, or almost always) they experienced each state during each quarter of their normal run. To facilitate an understanding of the sub-structure of the "state of mind" items, a principal component factor analysis followed by a varimax rotation (orthogonal) was computed for each quarter of the run.

Two-way ANOVA for changes in the state of mind. To determine the relationship between the positive addiction state and the length of run, an analysis of variance was computed between length of run (a dichotomous variable, one to four miles and five+ miles) and quarters of the run with repeated measures on the quarters of the run, for the three principal state of mind factors.

Statistical significance. In view of the fact that triangulated methodologies were utilized for data collection and analysis, the writer deemed it appropriate to set the .05 level of confidence as the minimum level for not rejecting a research hypothesis. Significance levels were reported, however, when they reached the .01 or .001 level of confidence.

Definition of Terms

Intrinsic Motivation - persisting in an activity solely for the pleasurable feedback gained from involvement in the activity.

Extrinsic Motivation - persisting in an activity on the basis of perceived rewards external to the activity.

Negative Addiction - a type of addiction wherein the long-term effects on an individual's social, psychological and physical processes are detrimental to that individual's functioning capability.

Positive Addiction - a type of addiction wherein the long-term effects on an individual's social, psychological and physical processes are such that the individual's functioning capabilities are enhanced.

Peak Experience , - the highest state of human involvement and pleasure characterized by increased levels of mental awareness and decreased levels of situational monitoring.

P.A. State - analogous to the peak experience in intensity and involvement, the P.A. state is conceptualized as a state of human awareness that can be achieved in consequence of planned preparatory stages.

Flow - a wholistic sensation that occurs when the individual merges one's awareness of an activity with involvement in that activity.

Ecstasy - a condition analogous to the peak experience and P.A. state; however, it is uniquely characterized as providing the individual with a feeling of intense unity with the universe and of one's place within it.

Delimitations and Limitations

Delimitations

1. Due to time and cost factors, subjects were delimited to 104 in the survey and 15 in the depth interviews.

2. Individuals participating in the depth interviews were restricted to those who met Glasser's (1976) pre-conditions relative to miles ran per week (35) and length of time involved with running (six months).

3. All individuals participating in the study were 18 years of age and over, due to the complex nature of some of the questions and the fact that most of the subjects the author contacted belonged to

running groups of adults.

4. Participants for the study came from the cities of Edmonton and Calgary, particularly from their universities. Since many individuals utilized the change and shower facilities at these institutions, the greatest number of respondents could be recruited for the study.

Limitations

(i) The survey instrument contained an inherent connotation problem relative to the use of the term addiction. However, the use of the term was maintained on the rationale that no other phraseology would adequately reflect on the postulation of positive addiction.

(ii) The sample was biased to the extent that data collection was primarily on males. Although some female respondents were included in the survey, no attempt was made to generalize to the female population at large.

(iii) Due to a high response rate, and the fact that it was impossible to know which individuals failed to complete the questionnaire, no call-back procedures were utilized in the study.

Chapter 4

RESULTS AND DISCUSSION

The results of the study have been divided into two sections, the first dealing with data reported in the mailed questionnaire, the second dealing with the results of the depth interviews. The survey data analysis follows the format of the survey itself; parts I and II, relating to the individual's personal and running history, provides a demographic profile of the typical runner in the study, part III is an analysis of the changing states of mind that an individual experienced throughout the course of a run, part IV presents evidence of the individual's feelings about running which in the Carmack and Martens (1979) study provided the commitment to running (C.R.) score, and part V reviews the outcomes that individuals felt were a result of their running behaviour.

Section two presents the results of the depth interview questions as they appeared in the interview format (Appendix C). Rather than recount each individual's response, the writer attempted to present the prevailing attitudes of the group as a whole. In cases where it was appropriate, a percentage breakdown of the data was presented; otherwise, individuals (all male) were referred to by their initials (to protect their anonymity) and quoted directly. Since the bulk of the depth interview data was anecdotal in nature, its impetus and explanation were left for the discussion of the results in the latter part of this chapter.

The discussion portion of the chapter integrates information from all three methodological strategies and addresses the hypotheses and related questions outlined in the previous chapter. The format of the discussion sections is as follows: (1) an overview of the running sub-culture; (2) an analysis of the run as it was experienced by runners at various levels of ability; (3) racing as a rite of passage; (4) running as an addiction process; (5) good runs and the altered states of consciousness; and (6) verification of the proposed model.

Results

A Demographic Profile of Survey Respondents

Of the 130 questionnaires distributed, 109 were eventually returned. Five of these questionnaires could not be used due to the incomplete responses provided. This left 104 respondents participating in this part of the study, providing a usable return rate of 80 percent.

The average age of individuals participating in the study was 29 years with a range from 18 to 59 years. Among the 104 respondents, 81 percent were men, 20 percent were women. The median level of education was between 17 and 18 years; however, the results were no doubt skewed by the fact that 30.8 percent of the individuals surveyed had completed 20 years of formal education.

When surveyed on their participation in sports other than running, 72 percent reported that they participated in other sports, while 28 percent reported that they did not participate in sports other than running.

The respondents indicated a range from 12 to 48 years when they began running regularly, dating on the average from 22 to 23 years of age. The average length of time that the runners had been involved with the sport of running was four years (range of six months to thirty-five years).

The typical runner in this study ran between four and five miles per day, and on the average, four or five times per week. These runners also reported that they had only missed an average of nine days in the last six months, on days when they had intended to run. Seventy-seven percent of the runners surveyed reported that they were uncomfortable when missing a run, and that they had become aware of this discomfort somewhere between the fifth and sixth month of their running careers.

Forty-seven percent of the respondents indicated that they usually ran alone, 15 percent usually ran with one other person, while the remaining percentages were scattered evenly, stating that they ran with two up to six people in a group. None of the individuals in the survey indicated that they ever ran in a group larger than six people. Almost all the respondents (98 percent) stated that they would continue to run even if they were forced to run alone.

Sixty percent of those questioned reported that they competed in races, but only three persons stated that they would quit running if they were no longer able to compete. Ninety-seven percent of the individuals surveyed stated that they intended to continue running indefinitely.

In response to a question regarding their perceived addiction to running, 30 percent claimed to be very much addicted to running, 48 percent somewhat addicted, and 22 percent indicated that they were not at all addicted to running. The addicted runners reported that it required approximately 11 months before they perceived any addiction, although a few individuals (11) reported that they had been running for eight years before recognizing an addiction process was in place.

Questionnaire Results Pertaining to the Runner's State of Mind

In order to determine the underlying structure of the state of mind items, a principal component factor analysis followed by a varimax rotation was computed for each quarter of the run. Five factors were extracted for the first quarter, six for the second and third quarters, and seven for the fourth quarter. Three of these factors accounted for 86.7 percent of the explained variance in the first quarter, 82.3 percent of the explained variance in the second, 80.7 percent of the explained variance in the third, and 73.1 percent in the fourth quarter. As a result of these findings, only the first three factors were selected as the principal underlying factors.[11]

The first factor was labelled "psychological well-being" because of high loadings on such items as; "I am relaxed and tranquil, my mood and morale lift, or I am energetic." These items seemed to indicate an optimistic or positive feeling toward the running experience. The second factor was labelled "psychological uneasiness," due to high loadings on items suggesting unpleasant feelings or pessimistic attitudes towards the run. The third factor was labelled "spin-out" because of the heavy loadings on such items as "letting the mind go, or being in a detached and dreamy state." This latter factor was interpreted in the Carmack and Martens (1979) study as reflective of the P.A. state or the peak experience. A more comprehensive breakdown of the loadings on each item for the three factors is presented in Table 1.

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[11] The Carmack and Martens (1979) study also found three principal underlying factors, so for ease of discussion they were labelled in the same manner in the present study.

In order to determine if any relationship existed between the length of run and changes of mental states during the run, an analysis of variance was conducted between average length of run (over five miles and under five miles) and quarters of the run, with repeated measures on quarters of the run. These were then computed separately for the three state of mind factors. Results of the analyses failed to show a significant difference between the over five-mile runners and the under five-mile runners for the four quarters of the run on each of the three factors. Various figures are presented later in this chapter, showing these relationships and trends, but no significant differences between the two groups of runners.

In an effort to further investigate the P.A. state or third factor, the average length of run was trichotomized into 1-3 miles, 4-6 miles and 7+ miles. A one-way ANOVA failed to show significant differences between any of the three groups on the spin out factor; however, there was a trend for the groups to be higher on the spin out factor as their length of run increased.

Respondent's Feelings About Running: The C.R. Score

The 12 questions comprising part IV of the survey were utilized in the Carmack and Martens (1979) study as a commitment to running (C.R.)

Table 1

Orthogonally Rotated Factor Matrix for State of Mind Items for Quarter One[1]

ITEMS	FACTOR LOADINGS Psychological Well-Being	Psychological Uneasiness	Spin Out
1. "I just let my mind go. I am not completely aware of my surroundings."	.11	.03	.79
2. "My mind seems to spin free. It is there, but not there."	.10	.08	.66
3. "I seem to float."	.40	.05	.54
4. "I have a sense of confidence, of well-being."	.49	.22	.18
5. "I have a feeling of euphoria, almost real happiness."	.59	.03	.20
6. "I am bored."	.20	.47	.05
7. "I consciously try to solve a problem or figure out something."	.04	.22	.18
8. "I feel depressed."	.23	.57	.06
9. "I have a sudden flash of insight when I least expect it."	.26	.02	.14
10. "I just kick my mind out of gear."	.18	.18	.11
11. "I feel heavy and tired."	.12	.67	.13

Table 1

(continued)

ITEMS	Psychological Well-Being	Psychological Uneasiness	Spin Out
12. "My mood and morale lift."	.72	.22	.03
13. "I feel optimistic."	.69	.21	.07
14. "I am relaxed and tranquil."	.73	.06	.14
15. "I feel grumpy, irritable, and impatient."	.13	.66	.04
16. "I feel friendly."	.56	.12	.04
17. "I am angry."	.06	.48	.01
18. "My mind is detached and dreamy."	.22	.19	.49
19. "I am uptight."	.10	.70	.05
20. "My thoughts are unpleasant."	.17	.77	.03
21. "I am energetic and enthusiastic."	.65	.22	.06
22. "My worries fade away."	.44	.21	.19
EIGENVALUE	5.25	2.89	1.26
VARIANCE PERCENTAGE	48.5	26.7	11.6

(Column header "FACTOR LOADINGS" spans Psychological Well-Being, Psychological Uneasiness, Spin Out.)

[1] Factor loadings were similar for all quarters of the run, except quarter 3 where psychological uneasiness and spin out reversed order of appearance.

score. The range of possible scores (12-60) were used to index that particular person's commitment to the running behaviour. Data from the present study revealed a mean C.R. score of 49.65 with a standard deviation of 6.22. The range of scores was from 26 to 60.

In order to test the relationship between C.R. score and certain descriptive variables, namely length of run, discomfort experienced when a run was missed and perceived addiction to running, these three were treated as discrete independent variables in a series of variance analyses where the dependent variable was C.R. score. Discomfort experienced when a run was missed (yes or no) and average length of run (over five miles and under five miles) were dichotomous variables. The third variable, perceived addiction, was trichotomous in that the individual could respond 'very much', 'somewhat' or 'not at all'. These three discrete variables revealed significant differences in C.R. scores for all analyses (see Table 2). The C.R. score was higher for the over five-mile runner, $F(1, 96) = 16.66$, $p < .001$. The C.R. score was also higher for those who expressed discomfort when missing a run, $F(1, 96) = 4.68$, $p < .05$. Finally, the C.R. score was higher for those individuals who perceived themselves to be addicted to running, $F(2, 95) = 10.23$, $p < .001$.

In order to detect any relationship between C.R. score and the state of mind factors reported earlier, the factor weightings were utilized to generate factor scores for each of the three factors for each quarter of the run. These three factor scores for the states of mind during the run were then used as predictor variables in multiple regression equations where the criterion variable was C.R. score. None of the three factors significantly predicted C.R. score during any of

Table 2

Relationships Between Commitment to Running (C.R.) Score and C.R. Predictor Variables

PREDICTOR VARIABLES	C.R. SCORE Mean ($\bar{X}$)	C.R. SCORE Standard Deviation (S.D.)
A. Feelings When Run is Missed		
Discomfort	50.35	5.74
No Discomfort	47.09	7.33
B. Perceived Addiction		
Very Much	52.70	4.54
Somewhat	49.58	5.08
Not At All	45.25	8.20
C. Length of Run		
Under 5 Miles	46.59	7.18
Over 5 Miles	51.50	4.73

the four quarters of the run. To the extent that this research was interested in depicting trends, the factor "psychological well-being" was the most predictive in terms of explaining the percent of variance in C.R. score.

Perceived Outcomes of Running

Responses to the list of perceived outcomes were cross-tabulated with the average length of run reported by the survey runners (1-3 miles, 4-6 miles and 7+ miles). Results of the cross-tabulation revealed that eight variables were chosen by the subjects as the most valued outcomes of running, as illustrated in Table 3.

On each of the eight variables, the over seven-mile group reported that they perceived these outcomes as more valuable than the 1-3 mile group. On three variables; reduction of anxiety, reduction of tension, and feeling better, the over seven-mile group evidenced a dramatic number of responses in the "very much" category compared to the other two groups.

These results indicated that, of the outcomes most valued by runners, the over seven-mile group perceived these outcomes to a greater degree than the other two groups. This was especially notable in reference to those outcomes that could be considered psychologically therapeutic.

Results of the Depth Interviews

The 15 males who participated in the depth interview part of the study were selected on the basis of their intense involvement with running. All of the interviewees were running at least 35 miles per week prior to the interview and had been doing so for at least six

Table 3

Crosstabulations of Distance Run and Outcome Variables

Item	1-3 Miles (N=29)		4-6 Miles (N=35)		7+ Miles (N=37)	
	*	†	*	†	*	†
1. Cardiovascular endurance	30.2	29.0	34.9	29.0	34.9	41.9
2. Weight control	33.3	22.2	28.2	33.3	38.5	44.4
3. Mental alertness	31.4	18.2	31.4	39.4	37.1	42.4
4. Reduce anxiety	21.4	33.3	28.6	33.3	50.0	33.3
5. Reduce tension	24.5	28.9	28.6	34.2	46.9	36.8
6. Energy increase	24.4	28.6	39.0	31.0	36.6	40.5
7. Feel better	20.3	40.6	35.9	34.4	43.8	25.0
8. Provide a challenge	26.8	28.9	41.5	26.3	31.7	44.7

* Indicates percentage of individuals who responded "very much" to items as an outcome of their running.

† Indicates percentage of individuals who responded "somewhat" to items as an outcome of their running.

months. This allowed them to meet the pre-conditions that Glasser (1976) assumed were necessary and preparatory to regular attainment of the P.A. state and subsequently, positive addiction.

The first interview questions asked about the interviewee's age and occupation. The age of the informants ranged from 22 to 60 years. Occupations were varied; for example, included in the study were diverse occupations such as an engineer, tool and die maker, regional planning commissioner, university professor, physiotherapist, student, medical doctor, waiter, graduate student, milkman and an air courier. Sixty percent of the subjects interviewed could be considered professional types, while 40 percent could be considered blue collar workers. The average length of time they had been involved with running was 14.7 years with a range of 2 to 45 years.

When asked why they began running, most responded with health-related reasons. Running seemed to be the most efficient way of getting in shape and most of them had had some experience with the sport as a youngster. It should be stated that many of these individuals began running long before it reached fad proportions; in this sense, they could be thought of as the individuals who popularized running in the local community and not as individuals who went along with the latest trend in physical conditioning. J.M., for example, started running to stay in shape for hockey, P.R. wanted to reduce weight and prepare for basketball. T.C. stated he had ballooned in weight over the years and wanted to reduce. T.O. had been a competitor throughout his university career and continued because he enjoyed feeling physically fit.

When asked why they continued to run, 53 percent of the interviewees stated that competition was a prime motive for their involvement.

This did not negate their health-related reasons for beginning the sport, only that now health factors were seen as being well taken care of. The remaining 47 percent stated that the psychological boost they got from running (reduction of anxiety and tension) was the prime motive for continuing their running.

All of the runners interviewed indicated they ran at least five days per week; eight of the runners reported that they ran every day, two ran five days a week and the remaining five stated that they ran six days per week. The group as a whole averaged 63.2 miles per week with none of the participants running less than 35 miles per week.

The time of day when they ran varied with the requirements of their job, although P.R. stated that he chose his job as a waiter specifically so that he could run during the mid-day. Those respondents who were university professors usually ran during the noon break, mainly due to the nature of their teaching load and the fact that they could run with their friends at that time. The remainder who had 9:00 - 5:00 jobs most often ran after work. This pattern shifted on the weekends when many of the runners attempted to put in one long, slow run (usually Sunday morning) of approximately 15 to 20 miles.

One of the key questions in the interview dealt with enjoyable runs or the so-called "runners high." The runners were uniform in commenting that their good runs were enjoyable throughout and not subject to extreme peaks at any particular stage of the run. R.B. said, "Some days you're flying. Other days, its drudgery, maybe its your energy level or how your mind is." A.T. suggested it was related to fluidity: "The mechanics of the run are very smooth, I can remember every stride."

J.M. remarked, "If times are good or its a nice day out, some kind of trigger sets it off and the whole run is beautiful." C.K. stated: "Yes, I have enjoyable runs but not a runners high. I feel good, I could go further. . . I feel strong throughout the run and the remainder of the day." T.O. commented: "Some days are easier than others, some are difficult but always worth it. . . . Runners high is garbage, its related to individuals who only run a few miles and particularly related to a time when they find a smooth cadence." He went on to say that experienced runners were used to the proper cadence and the fluidity of their movement so they were not overwhelmed by the feelings associated with doing it effortlessly. Beginning runners, or short-distance runners, misinterpreted the feelings associated with smooth movement and a smooth functioning body, and claimed to experience "runners high." T.O. suggested that the lessons learned with placebos, where people respond as if they were the recipient of a "real" treatment should tell us something about the runners high.

The fluidity of the peak run seemed to preoccupy the minds of the runners involved in it; their thoughts were on the mechanics of the run and to that extent they were distracted from the world around them. When asked if they tried to recapture these feelings on subsequent runs there were mixed reactions. A.T. stated: "You search out this memory, try to relive it in the next run." When probed further, however, he revealed that he was speaking more of races than of everyday runs. J.B. commented: "I don't try to recapture runs, I just let them happen and usually I have good runs." T.O. indicated: "I don't try to manipulate the run, I let it manipulate me, each day is different. . . {each day} has its own problems and each run can handle these in different ways."

R.L. said his whole lifestyle was designed to allow him to recapture aspects of the good run. "I only eat certain foods. . . take a good break between eating and running. . . vegetable matter instead of meat, no macaroni and cheese." P.R. stated: "Every run is a new experience, each run is different, allows you to accomplish a goal afresh."

Even for those who consciously tried to recapture the feelings associated with a good run, their efforts were not always successful. R.L. suggested: "You just can't tell about a run, often I anticipate a bad one, but it turns out to be great." J.M. said: "You know its funny, after a night of drinking I usually expect to run terribly but sometimes I just fly. . . I just can't understand it. . . but usually a day later it catches up with me."

Competition played a prime role for many of the interviewed runners, and was at least a secondary consideration for most. J.B. summed up the latter group's philosophy: "I run in races to see what I can do compared to the other guys. . . also to see if I can go the distance." Many of the competitive group members recounted that in their youth they had been very competitive in track and felt that their promise as an athlete had the best chance of fulfillment in running. J.M. summed up this progression by stating: "When I was on the track team I hated running. I started doing better the more competitions I entered, so I eventually became hooked on road races. Competition keeps me sharp and keeps my enthusiasm up." R.L. remarked that he had done well in junior high, so at 20 years of age when he was gaining weight, he decided to return to running. "I felt like a loser, I knew if I didn't start caring for myself, I was going to go downhill. Now everything comes easier, I have lots of confidence and self-discipline."

The reactions of friends, families and workmates to their running highlighted the social problems that could arise for the dedicated runner. Individuals who were married expressed that some problems had occurred during their running careers. D.J. stated: "My wife had a negative view towards my running. . . . She thought it was a waste of time, but after I was injured and laying around a lot of the time, she realized that my crankiness and weight gain were directly related to my not being able to run." G.K. remarked about his wife: "She thinks its kind of funny and sometimes makes snide remarks about my involvement." B.F. said his wife was envious of his ability to run and mix with so many people as a result of that ability. T.C. suggested his problems with his wife were because he trained from home (she thought he made too much of a mess); he then trained from the university and found his problems with his wife were greatly reduced. J.H. said: "My wife is a bit of a nuisance in regards to my running, but I don't pay much attention to her."

The respondents who were not married stated quite frankly that their relationships with women were heavily influenced by running, to the extent that the continuance of the relationship often depended on that particular woman's attitude toward running. T.O., for example, stated: "My girlfriend whom I push and push to be a runner insists on being a jogger. She better become a runner; otherwise, we won't be together long." P.R.'s girlfriend thought it cut into their time together. He stated that it was a constant source of irritation, she wanted him to give up his running, pursue a career, and eventually settle down. He remarked that these attitudes didn't fit in very well with his own. J.M., R.L. and L.K. stated that their relationships were casual, mainly because of their training schedule and a preoccupation with a different kind of lifestyle than most people were pursuing.

Workmates were usually neutral or in some cases, supportive, of their running behaviour. The interviewees attributed this to the growing popularity of all sports and running in particular. None of the respondents felt persecuted because of his involvement with running. Regardless of the attitudes expressed towards them, they felt it had no influence on their running behaviour. Friendships, on the other hand, were usually chosen or maintained on the basis of attitudes towards running. A.T. stated that, "My friends are a product of my running." T.C. said: "My friends are mostly runners. . . . I have other friends but I try to keep them separate." B.F. commented: "None of us smoke, we're all moderate drinkers, besides, we love to talk about running." Some interviewees expressed concern over friendships that were fading as a result of running. G.K., for example, stated: "My running bothers some of my old friends. . . . We don't spend as much time together anymore doing the old things. . . I bug them to start running themselves. . . they try it for a few times and then usually quit." However, most replies were similar to L.K.'s: "If they are negative about my running, I don't associate with them anymore."

For most of the runners, a linear relationship existed between the time involved in running and the amount of running they were currently doing. T.C., for example, began running in 1972, ten miles a week. By 1974, he was up to 35 miles a week, by 1980 he was at his present rate of 55 to 65 miles per week. A.T., who has been running for 30 years, started out at approximately five miles per run, increased over the years from seven to eight miles per run, then to nine miles, and finally to the ten miles per day he currently was running. P.R. started his running career at three miles per day two years ago, gradually increasing prior to his first competition. Since the competition, he has steadily increased his mileage to the present level of between 50 to 55 miles a week. L.K. began running one mile per session. At the end of the first year, he was running 40 miles per week, by the end of the third year 70 miles per week, and at the end of eight years was up to 130 miles per week. He was running between 150 and 170 miles per week at the time of this study.

Some of the runners digressed from this linear relationship and evidenced a dramatic increase in mileage after a very short time.

R.L. started at 2.5 miles, four times a week. Within three to four months, he was up to ten miles a day at a 57-minute pace. J.B. started at one mile, three times a week. By the end of four months, he was averaging 40 miles a week. The increase, regardless of whether it was dramatic or gradual, led to some type of injury in 80 percent of the runners interviewed. In all cases, its effect on the individuals concerned was dramatic.

D.J. recounted an achilles injury that kept him from running for almost two years. He said it was a time of "various depths of frustration and anxiety. . . I hit my mid-life crisis early, I felt my whole life was falling apart." B.F. had a cartilage operation on his knee that prevented him from running for 12 weeks. He recalled that time: "I felt terrible, I worked like stink on my knee so that I could run again. . . . I felt lazy and fat all the time I was laid up." G.K. had an achilles stretch but kept running until the condition became so severe he was forced to quit running. He said: "I don't like not being able to run. Seeing others out running reminded me of when I was sick as a child. I had to sit inside and watch everybody else out playing." J.M. had a plantar facia tear that resulted in his having to lay off running for nine weeks. He accused his doctors of giving him bad advice in regard to treatment. During this time, he continued exercising by swimming and riding the stationary bicycle. He stated that he didn't want to gain weight. "I became obsessed; I was so scared of putting on weight." In actuality, his weight fell from 133 pounds to 119 pounds; a startling contrast in view of the fact that he had weighed 180 pounds when he played hockey. P.R. never experienced a serious injury, but the minor ones he suffered, "send a shiver down my spine, the thought of having to quit scares me." He said he was very aware of the signals from his body and could tell if an injury of any magnitude was coming on. As a precaution, he ran with 50 cents in his shorts, just in case he needed to take a bus home. T.C. experienced a back injury. He claimed to have accepted the fact that he couldn't run although, "I tried to keep running by jogging around the kitchen every day for a few minutes."

Probably the most dramatic example of determination to continue running was recounted by J.B. who had contacted mononucleosis at one point in his running career. He stated: "It felt like hell, it was terrible. I had lumps the size of golf balls on my neck, I couldn't even sleep. The fever was bad enough to keep the sleeping bag wet all the time and yet I still managed to put in my few miles every day. Some days I was so sick I couldn't run until just before midnight, but at least I got my miles in for the day."

Aside from the temporary depression associated with an injury, most of the runners agreed that the quality of their lives had dramatically increased as a result of their running behaviour. T.O. said: "Running is the most therapeutic thing in my life. . . its my substitute for the analyst. All my problems can be solved through running." He claimed running gave him a new perspective on his life. A.M. claimed that it helped him weather his divorce and "I'm sure its half the reason that I was able to attract Kelly" (his present wife). R.B. said that running gave him a confidence that spilled over into all aspects of his life. "Society stresses the healthy and lean look, the outdoorsy type. Its helped me to stay healthy, I fit clothes better and I have the athletic look." A.T. remarked: "Running helps fill my insatiable ego, my friends consider me a champion.[12] In 1970, I started smoking and drinking but I didn't feel very good about it, besides that's not how I really am." T.C. stated: "I had high blood pressure, was bad tempered, smoked and drank too much. Now I have a better attitude towards everyone because I'm in better shape. I only wish I had known about running years earlier." P.R. commented: "Running is my freedom, it allows me to be the person I've always wanted to be." J.M. added that, "its a way of life that I enjoy and you know people respect me for that. I'd give up anything else, T.V., parties, but running is essential, its my play." G.K. remarked that it gave him a rebound capacity he never had before. He was no longer tired out from everyday stress and as a result, could cope with his whole life much better.

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[12] A.T. holds the world record for the mile in his age group.

The interviewees perceived very little that was negative about their involvement with running. Most commented that if there was anything negative about it, it was probably the number of injuries or the reduced social life, but in their minds these were almost inconsequential. B.F. felt: "My running has maybe damaged my relationship slightly with my wife. I used to spend a lot more time with her before I began running." J.M. felt there were some physical drawbacks but that "a runner has to put up with those and get used to them. Usually they are the result of his own stupidity anyway." P.R. felt some antagonism from others in social gatherings but he felt this was more envy than anything else. A.T. commented: "Runners suffer from social ostracism not because of others, but when you're training six hours a day you don't have much time left over." T.C. said: "The guys I'm running with are getting too competitive, they're not happy with the pace any more and I'm feeling the pressure that we're not running just for the fun any more."

A majority of the runners admitted that they were addicted to running; a few opposed the concept because of its nasty implications but admitted that the habit was pretty strong. For example, R.L. remarked: "I don't like the term addiction, it has a negative connotation, but it {running} is a big chunk of my life and I do it often. In a roundabout way I guess I'm saying I'm addicted." T.O. was addicted to running and commented: "I get withdrawal symptoms if I don't run sometime between 11:45 and 2:00 o'clock every day. I just have to get going." R.B. said: "Yes, I am. The guilty feelings must mean its a psychological addiction but then I also have physical feelings if I don't run. A.T. stated: "Addicted? Right now I am, since 1978 I haven't missed one day, I would die if I had to." J.M. said: "Yes, probably. I was a pretty good drinker before, now I guess I've substituted running for drinking." G.K. elaborated by suggesting that dependent personalities were the most likely candidates for addiction. "I don't like to think of myself as a dependent person, but then maybe we all are a little bit." D.J. claimed to be hooked on seeing the improvement he was capable of, although he did wonder at how positive the addiction was when he was injured.

Discussion

It would not be congruent with the philosophy of addiction as put forth in Chapter 2 to assume that running had an inherent quality that bound individuals to its use. That type of explanation for running involvement was overly simplistic and failed to take into account how the individual's perception of both the physical effect running had on oneself and the social effect running had on the individual's lifestyle had served to keep the person involved with running. The fact that reasons for continuing running were different from those that started the individual running pointed out that new and different forces were at work (Carmack and Martens, 1979; Jorgenson and Jorgenson, 1979; Sachs and Pargman, 1979). For most individuals, running had gone beyond being a method for restoring physical vigour or recreating the individual's motivation to pursue other aspects of one's life. For many, running had replaced work as their prime interest in life (Sheehan, 1978; Spino, 1976).

Some of the interviewees frankly discussed their desires and intentions to forego their present jobs in order to become more involved with running. R.L. indicated a desire to switch to a job that allowed him more time to train and compete in road races. P.R. indicated in a followup to the original interview that he had quit his job as a waiter and was in the process of selling his car so that he could spend the summer months training and competing. His intention was to return in the fall to some type of job that would allow him close contact with the running sub-culture.

To help understand the forces that were at work on runners, one had to investigate the context in which they were pursuing their sport. The results of the author's investigations clearly showed that running did not happen in a vacuum, even if the runner ran strictly by himself. He sought out information, companionship and a lifestyle that was somewhat in accord with the running sub-culture. To better understand the extent and commitment of his involvement would require at least a minimal understanding of the running sub-culture.

The term sub-culture implies that there is a definite pattern of symbols, beliefs, norms, and values that are shared among its members but not by society at large. Symbols refer to any shared act or object that is accepted as standing for something else. Beliefs are shared ideas concerning humankind and the universe. Norms refer to generally accepted or sanctioned forms of behaviour, and values are a shared set of criterion used in evaluating things as to their desirability or correctness (Van Der Zanden, 1965). How these aspects are manifested in the runner's sub-culture are discussed in the following sections.

Sub-cultures also influence the member's behaviour outside the dimensions of the sub-culture to the extent that society at large could recognize that individual as a member of that group. For the new member this infers that one must learn the techniques and meanings of the sub-culture and at some point, if one's membership is to continue, adopt these as his or her own.

Sharing in a sub-culture does not mean that the member must always be in close contact with fellow members. They may be interspersed to such a degree that this is impossible, or the nature of the sub-culture is such (notable in the case of runners) that close interaction is limited by ability to perform. Lerman (1967) pointed this out in his study of delinquent gangs, where he found a general delinquent sub-culture whose members interacted only in pairs and triads and not in large groups. He concluded that sub-cultural boundaries and interaction boundaries were in fact distinct phenomena.

An Overview of the Running Sub-culture

The first impression one had of runners was that they came in a wide assortment of sizes, shapes, ethnic backgrounds and running attire. Initially, this diversity suggested a confused, highly unstructured group of individuals sharing only a common interest in running, but closer inspection revealed a general pattern that was indicative of each runner's degree of involvement.

Beginning runners generally followed a definite pattern that reflected earlier outdated concepts of exercise. Clothes were heavy and restrictive, not only to prevent catching a cold or fever but also to sweat off the pounds through an overheated workout. Generally, after a few weeks, the novice began to shed the unnecessary clothing but the process could vary in time depending on one's exposure to more experienced runners and one's general physical condition prior to beginning running. Runners who were significantly overweight or flabby may have found the embarrassment difficult to overcome for some time. Usually as one got in better shape and was capable of longer and faster runs the runner saw the utility and gained the confidence to venture forth in loose shorts and a T-shirt or sometimes no shirt at all (Gary, 1972).

Some novice runners found it necessary to distract themselves, in a variety of ways, from the pains associated with the early stages of running. Running in large groups, so that they could converse with others undergoing similar agonies, running with cassette decks strapped to their chests, or headphones over their ears, usually was an indicator of the novice runner. Advanced runners viewed this sort of behaviour with disdain, as it showed in their eyes a complete lack of understanding of the psychological benefits that could accompany distance running. It was usually difficult for the advanced runner to be sympathetic to the beginner's need for distraction or to recall a time when that same advanced runner was not capable of the powerful movement devoid of pain, that allowed such devotion to the sport. This transition period usually did not last too long, depending of course on the physical condition the individual was in at the start (Heaps, 1978; Jorgenson and Jorgenson, 1979; Leonardson and Gargiulo, 1978).

The best runners were also identifiable to some degree by their running attire. In the locale where the present study was conducted, a Chasquis T-shirt was a symbol of a competent runner as was a T-shirt advertising a completed marathon. Shoes were generally not a reliable method of distinguishing between good and beginning runners. In the "dark ages" of the 1960's, elite training shoes were difficult to obtain and largely unknown so they tended to be found only on select runners. Nowadays, with sports in general and running in particular reaching new heights in popularity, it is not uncommon to see individuals walking down the street in elite training shoes. Even the stage of wear is no indication of running expertise. Some runners wear out shoes so fast they appear to be constantly wearing new ones. However, it is still possible for the running adherent to identify a serious runner by the make of the runner's training shoes. The magazine, Runners World, annually ranks the popular shoes giving a five-star rating to only a select few. Runners who train in these shoes (aside from accidental purchase) usually have considered very carefully the magazine's analysis and consistently purchase the top-ranked model.

The locations in which runners pursue their sport are as varied as the runners themselves. Some prefer to begin and end their runs at home; others seek out universities, fitness clubs or community centres. Each runner usually has three to five routes that can be taken, that vary both in length and degree of difficulty in order to allow the runner to vary the training regime to fit the demands of one's schedule and the person's "mood" for the day.

The facilities that this writer frequented (The University of Alberta) were utilized by runners from 6:00 a.m. to approximately 10:00 p.m. with the prime times occurring from 11:30 a.m. to 2:00 p.m. and again from 4:00 to 6:00 p.m. The heavy influx of runners at these particular times was reflective of job commitments, and to a lesser degree, the individual's preference for splitting up one's own day. Those running at noon suggested it helped their performance during the afternoon while those running later in the day felt they were refreshed for the evening.

Early in one's career, the runner began to feel that the daily run set the individual apart from the rest of society. The runner began to feel physically superior to the everyday sendentary citizen and this in turn served to convince the runner that his lifestyle was quantitatively (longer life) and qualitatively (better life) superior. Whether these were real or imagined virtues was sometimes difficult to ascertain by casual observation, and probably accounted for many of the negative attitudes towards running that many non-runners hold. For example, many new runners espoused the benefits of running long before any physical improvements were in evidence or even possible (Gary, 1972; Heaps, 1978). At the other end of the continuum, some elite runners evidenced a gaunt, hollow look that was far from attractive to society at large.

This preoccupation with acquiring and maintaining a slim physique had reached almost phobic proportions for many of the sub-culture's members. This thinking may have stemmed from the idea that fat was unhealthy or that it limited one's performance but underneath this rationale, there seemed to be an even stronger force of peer pressure. J.M.'s preoccupation with actually losing weight while he was injured addressed something more serious than getting out of shape. Also, it was not uncommon for members of the groups the author ran with, to pinch their waistlines regularly throughout the day and remark that they needed to lose two or three more pounds, and this comment from an individual who already gave the appearance of being skinny. Other members made regular trips to the scales to check their weight before and after a run, as well as several other times per day. The few weeks when these scales were being repaired provided many individuals in the change area with a constant source of amusement as comments from runners ran the gamut from minor name-calling to five-minute tirades on the "lazy slobs" who looked after such devices.

Aside from the sub-culture's pressure for its members to remain slim, and the obvious weight restrictions of the sport there was a vague feeling among the members in regards to surviving some unforeseen calamity. Any catastrophe, whether emotional or environmental, was considered surmountable as long as the runner continued his training. These feelings may have evidenced a degree of alienation from society in general but were more likely a result of the perceived physical and psychological preparedness provided by the sport as well as general feeling of superiority over the ordinary citizen who would not have the physical capability to escape or survive a calamity.

This preoccupation with cardiovascular efficiency and running prowess set them apart from society in other ways. In order to run every day, the members became moderate or exclusive in their eating, drinking and sleeping habits. As many of the interviewees pointed out, it was difficult to train several hours each day if one had been out drinking and partying the night before. As a consequence, as B.F. stated, many runners socialized with non-smokers and moderate drinkers who shared similar views on running. In other words, runners ended up spending much of their time with other runners.

New runners gradually came into this fold to communicate with others who had been through the same painful experiences and had esoteric knowledge regarding the myriad problems a beginning runner was faced with. Their questions and problems probably did more than anything else in terms of forcing them to search out and associate with other members of the sub-culture. Running for one week with shin splints or achilles tendonitis was ample motivation to seek out a willing source of information or advice. This common store of knowledge, remedies and anecdotes, that was readily available to all runners, began to foster a feeling of community, replete with norms for behaviour and argot for communication.

The argot of the running sub-culture was so flavoured with semi-medical and physiological terminology that an unsuspecting passerby might feel he or she had wandered near a medical convention by mistake. One could almost specify a runner's degree of involvement in the sub-culture by the runner's use and knowledge of this highly technical jargon. In many cases this reflected an interest in a real injury, but there were instances where runners were evidencing a neurotic interest in an imaginary injury that in all likelihood would never befall them.

As the new member became involved with the running sub-culture he invariably began to investigate the technology associated with it. This was usually to be found in a magazine that for all intents and purposes has become the runner's bible, Runners World. In its pages were articles that ranged from scientific comparisons of the leading shoes to explanations of the various carbohydrate loading techniques. Much of the esoteric knowledge known to the running sub-culture appeared to have been derived from this magazine, its imitators, as well as numerous best selling books (Fixx, 1977; Sheehan, 1978).

Once the runner was familiar with the technology and training techniques "necessary" to running improvement, the member felt he must begin to calibrate his performances more closely. So began the statistical milieu that accompanied most runners, as they strived to record times and distances. The beginning runner trusted this information to memory, the more advanced runner may have filled filing cabinets or decorated his (her) home and office with record charts in an attempt to trace one's own performance. Very few runners moved up in mileage blindly, it was usually the result of careful planning and attention to weeks of times and distance. This movement upwards in training was partly the result of a desire for further self-improvement and partly because of an ever-increasing desire to know where one stood in relation to other runners.

The stage for competition had been set in the everyday run where, according to how one felt on a particular day, the runner would set a hot pace or attempt to keep up to a hot pace relative to other running mates. This form of competition shouldn't be construed as a zero sum situation where one runner was the winner and the rest were losers, but as a form of self-evaluation whereby the individual runner could gain some feedback as to one's own training programme. If the runner noted an ability to cope with a hotter pace or sustained a longer kick at the end of the run, it provided the runner with a form of positive reinforcement that would urge the individual on to become a better runner. D.J. commented on this when he suggested that what "hooked" him on running was seeing a steady improvement in his running ability. The role that improvement played in terms of further involving the runner in the sub-culture is discussed later in the chapter. At this point, a discussion of the run itself will serve to highlight other aspects of the runner and his world.

The Run

The run itself was the central theme to the running sub-culture. In some respects, it was the ultimate practical expression of existentialist philosophy as it related to the pursuit of self-realization. The run could and did bring its adherents face-to-face with their own limitations and potential. The changes and improvement in physical performance and self-concept that accrued to runners could ultimately provide the basis for a new definition of one's own existence. This redefining of the individual's existence could and did extend past the run into the individual's total lifestyle. How this awareness and subsequent change came about was best understood in the context of the run.

The episode of the run began at a pre-arranged location and time agreed upon at the conclusion of the previous run. Typically, these meeting places provided shower and change facilities with an easy access to suitable running courses. In the locale of the present study, meeting places were usually The University of Alberta, the Y.M.C.A. or the local community field house.

During the course of changing from street clothes into running gear, a constant chatter was maintained relative to times, distances, shoes, injuries or other run-oriented bits of information. The day's course and pace may have been mentioned but the final details were usually left to the initial section of the run.

After the runners had changed they congregated at a pre-run area that afforded them an opportunity to stretch and warm up. Almost ritualistic in appearance, these exercises were designed to offset the problems that could arise from the selective strengthening of muscle groups. These exercises usually concentrated on the hamstrings and lower calf muscles but it was not uncommon to witness a 25-minute stretching session where all of the major muscle groups were flexed.

The initial stage of the run was marked by casual conversation and an easy pace. A runner usually used this stage as an opportunity to get in tune with his body or test it out for any pains or discomfort that may have warranted some attention. Barring any muscle pulls or strains, the runners gradually increased the pace and reduced the conversation as they settled into the process of the run.

Runners who averaged over five miles per session experienced different mental sensations prior to and throughout the duration of the run than did those who averaged under five miles per session. For those over five miles, the first quarter of the run was marked by higher levels of psychological well-being, psychological uneasiness and spin out than it was for those runners who averaged less than five miles per session. These comparisons are illustrated in Figures 7, 8 and 9. The apparent paradox of runners simultaneously experiencing high levels of psychological well-being and psychological uneasiness may have reflected a transition from one state of mind to another and not two entirely different states of mind. The runner may have felt psychologically uneasy due to a buildup of tension and anxiety associated with the working day world. This attitude may have been replaced during the first quarter of the run as one anticipated the lowering effect on these same psychological factors (Davidson and Schwartz, 1976; Folkins, 1972; Lion, 1978). It was important to remember that a quarter of the run represented a distance of 1.5 to 2 miles; ample time to experience a transition in attitude towards the run. It was also noteworthy that runners averaging

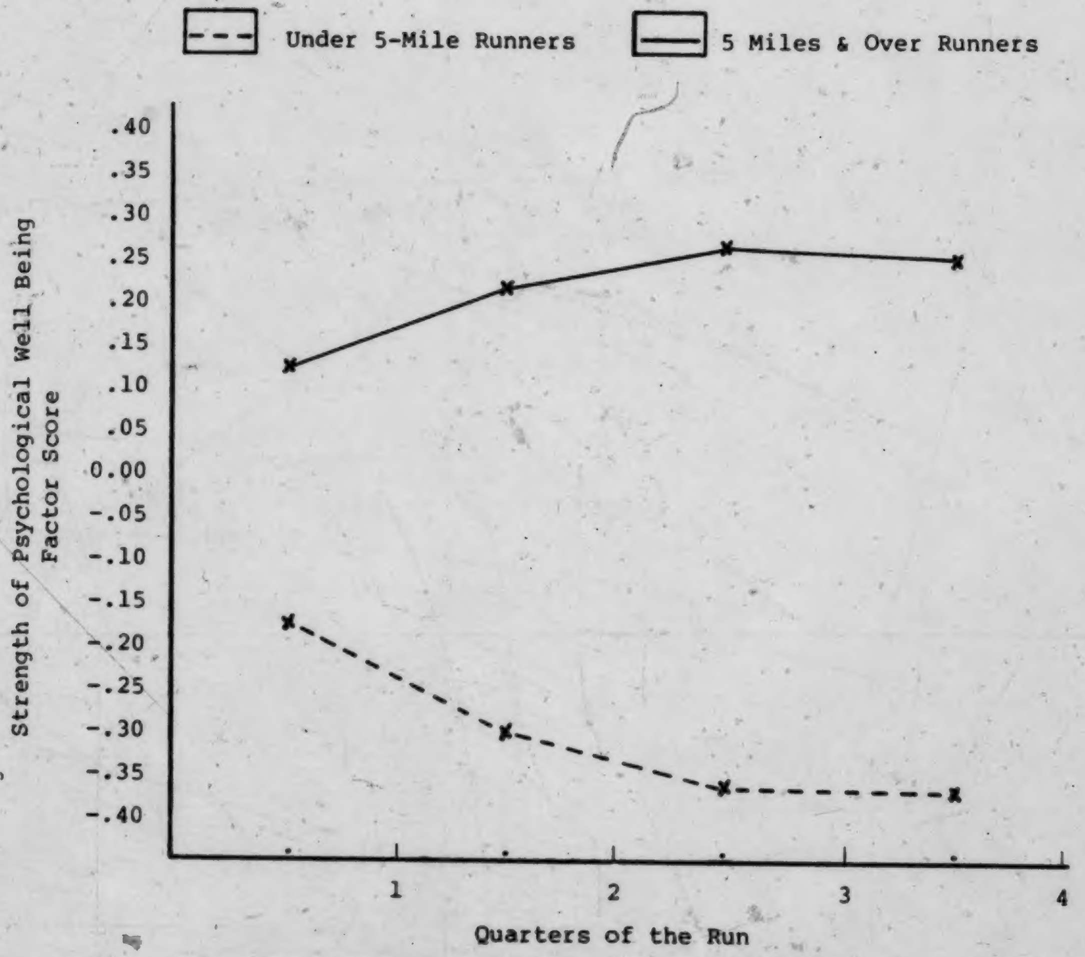

Figure 7. Psychological well being state of mind profiles for under versus over 5-mile runners. The differences illustrated are not statistically significant.

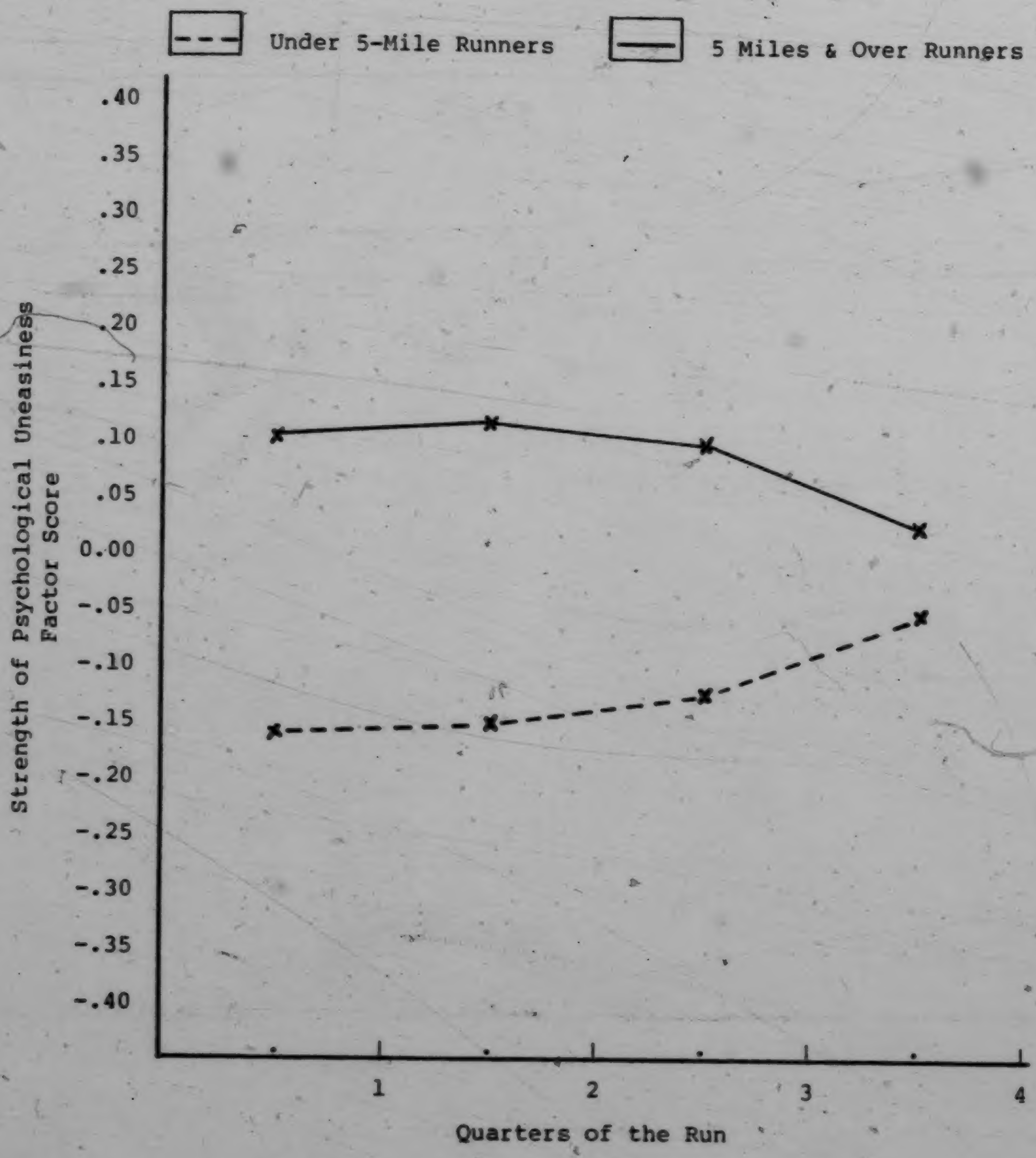

Figure 8. Psychological uneasiness state of mind profiles for under versus over 5-mile runners. The differences illustrated are not statistically significant.

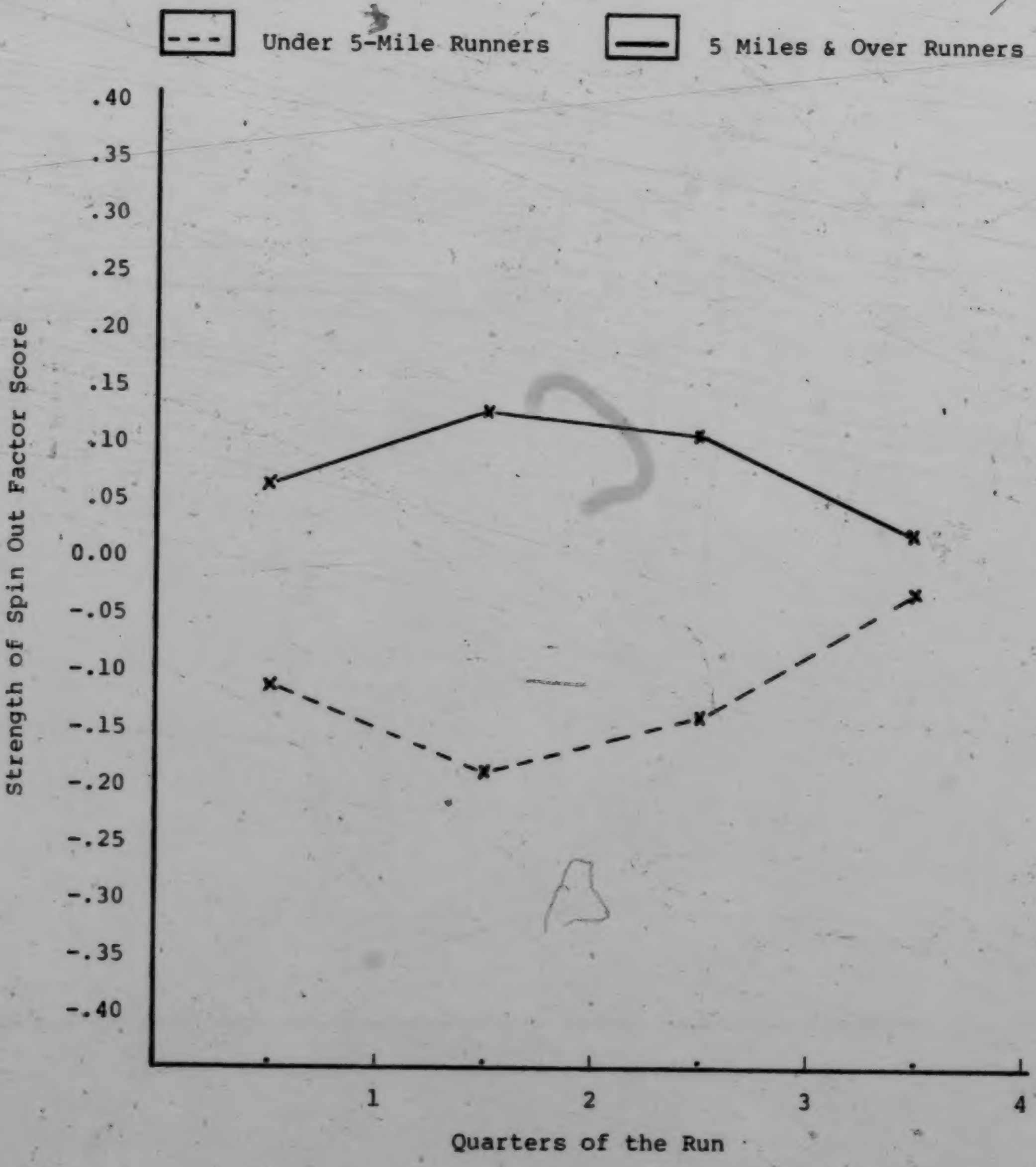

Figure 9. Spin out state of mind profiles for under versus over 5-mile runners. The differences illustrated are not statistically significant.

over five miles per session were significantly higher on C.R. scores than the under five-mile runners, revealing a significantly higher perception of the positive effects that running could have on their psychological state.

The fact that over five-mile runners scored higher on the factor spin out during the first quarter of the run may have been partially explained by an examination of those items that loaded highly on the factor spin out. For example, "letting the mind go or letting the mind spin free" seemed to indicate that the individual had the ability to shift one's own mind away from the tension inducing aspects of one's life and began to "get into the run." This did not imply that the over five-mile runner was entering the P.A. state or peak experience. Interviews with elite runners indicated that this high level of optimism and tension reduction was still characterized by a monitoring of performance. This may have indicated that the third factor labelled spin out had been inappropriately named and should have been labelled instead in a manner descriptive of general tension reduction and a refocussing process on the run itself.

The under five-mile runner, by way of contrast, may have been anticipating different results from the run. For example, a greater concern with the physical stress that accompanied the run, rather than the positive psychological effects, may have accounted for a lower score on the well-being factor. The difference on the psychological uneasiness factor may have been more of a perceived difference than an actual one, especially since the over five-mile runner had a greater investment in the perceived effects of the run (evidenced by a higher C.R. score).

The second quarter of the run was usually marked by a decrease in interpersonal communication, signalling that each runner was attempting to finalize pace and breathing for the run. This obviously varied with ability level, elite runners being able to settle into their pace almost immediately while beginning runners may have taken most of the run to determine their particular cadence.

The mental states originating in the first quarter of the run became more pronounced for the second and remaining quarters of the run except for the factor spin out. Psychological well-being continued to increase for over five-mile runners while steadily decreasing for the under five-mile runners. This was congruent with the writer's personal experience in that under five-mile runners constantly felt the strain of the run while over five-mile runners became more optimistic and relaxed as the run progressed.

Psychological uneasiness continued to drop for over five-mile runners throughout the course of the run while the same factor increased for under five-mile runners.

The spin out factor was highest for over five-mile runners toward the end of the second quarter and lowest for the under five-mile runners. The slight variation from the starting level on the spin out factor tended to suggest that high levels of euphoria were not evident on the typical run for over five-mile runners. By the end of the run, spin out scores returned to almost original levels for over five-mile runners and increased to slightly higher than original levels for under five-mile runners.

The changing states of mind evidenced by the runners in the present study differed markedly from those of the Carmack and Martens (1979) study. Although not significantly different, the present data revealed that over five-mile runners displayed a trend towards a higher score on all three factors over all quarters of the run.

The Carmack and Martens (1979) study showed the over five-mile group to be consistently higher only on the spin out factor. On the remaining two factors, over five-mile runners started higher on psychological well-being and lower on psychological uneasiness. During the second quarter, their results showed a reversal trend, so that by the end of the third quarter, over five-mile runners were lower on psychological well-being and higher on psychological uneasiness. These trends again reversed in the last quarter of the run with over five-mile runners exhibiting higher scores on psychological well-being and lower scores on psychological uneasiness.

Runners typically tended to "pick up the pace" towards the finish of the run. This may have been in consequence of the competition mentioned earlier, or in some cases it may have been anticipation of the end of the run. It was noteworthy that many runners reported that it was only towards the end of the run that they achieved a smooth, relaxed running form that seemed to allow an easy increase in speed.

Upon completion, the runners congratulated one another for the "good run," regardless of how they performed or felt. This congratulation ritual gave a psychological boost to the runners and cemented the group feelings of solidarity. It was at that stage (immediately after the run) that runners reported heightened feelings of well-being. The physical sensations that accompanied a bout of hard work as well as the pride of accomplishment served to give the runner a fresh, positive outlook that could last for hours. As one runner stated: "If life can be this good, nothing can be bad."

Racing: A Rite of Passage

Road racing has achieved such a degree of popularity that many members of the sub-culture planned their summer weekends and vacations so that they could participate in as many races as possible. In many cases, the whole family went along so that a picnic could be held after the race was over. Local running clubs, such as the Chasquis Running Club in Edmonton, responded to the popularity of these events by listing four full pages of marathons organized for the summer and fall months. This preoccupation with road racing has also been reflected in the results of the present study, wherein 60 percent of the survey respondents indicated they had competed in races while the majority of the depth interviewees stated it was their prime motive for running.

Racing may be analogous to the rite of passage that is prevalent in many sport sub-cultures. Jacobs (1976) spoke of informal and tournament sparring in the karate dojo as the rite of passage that allowed members to move from one status level to another. In much the same manner, racing (informal and formal), allowed the runner to move upwards in status with respect to one's own sub-culture.

Informal racing took place in the context of the everyday run and was viewed by the members not as a challenge, but as an individual's desire to compare the present day's performance both to his own past performances and the individuals he was currently running with. Jacobs' (1976) view of the karate dojo was analogous in this regard. Junior members sparred with senior members and with each other, not so much to win but rather to practise and perfect their technique. Runners did much the same thing in the context of their run. For example, on any given day, one member may have felt physically stronger and more psychologically motivated to run at a faster pace. The other members understood that and instead of chastising him for setting a hotter pace, they attempted to use him as a gauge of their own performance. All members realized that asking him to slow down would have been equivalent to asking him to deny himself the very joy of running, which was to run with the flow or character of each particular run. Many runners pointed out to the author that one of the unique aspects of running lay in the fact that each run had a uniquely different character. As this character unfolded, the essence of running was to go with it, and let it take you wherever it dictated.

The end of the run was somewhat different. Individuals may have decided to sprint against each other, depending of course on how they felt physically and psychologically. Some runners habitually would "take it in hard" while others tried to maintain a constant pace throughout. The latter probably felt that if they had that much left at the end, their pace throughout the run should have increased. In any event, those "kicks" at the end of the day's run mainly served as self-reinforcement; the knowledge that one could bring it in hard told one not only that the runner was improving, but that there was a chance that the final pace could be extended further into the run.

At some point in his running career, the runner felt a need to compare his performance to members outside of his own particular group. Many runners were somewhat apprehensive about this step, and their fears had some degree of validity. However, if they could withstand the trauma of being lapped by someone twice their age or having their times posted for the whole world to see, they would encounter a post-race fellowship that was astonishingly warm and positive. Food and drink (occasionally alcoholic) was free for the competitors and before long, the novice was caught up in a conversation telling everyone who would listen, and everyone did, just how wisely he ran the race. This further evidence of a community feeling did much to encourage the new runner to train even harder so that he could perform better on the next outing.

If the runner increased his ability and continued to race he would begin to notice and take advantage of different aspects of the racing environment. He began to eat differently prior to a race (carbohydrate loading techniques perhaps), he learned to stretch more each day, he learned to warm up properly in order to avoid injuries early in the race. He also learned what types of liquid would be of most benefit to his running (many marathoners drank several cups of coffee a day for the caffein stimulant) and how to recognize signs of heat prostration. He learned how to seed himself properly at a race so that he was not guilty of holding up a faster runner or in a situation where he would be held up by someone slower. He learned what it meant to run aerobically or anaerobically so that he finished the race instead of collapsing six miles from the finish. (The "wall" that runners referred to was generally felt to be at the 18-20 mile mark of a 26.2 mile marathon). In essence, the runner began to understand his body and its ability to perform under the stress of long distance running. Far from being a stranger within his own body, a runner evidenced a high degree of kinship to it, and as any doctor treating an injured runner would point out, the runner was highly motivated to return to the sport that afforded him this new sense of identity.

Once one had learned to maximize the physical aspects of his racing performance, the runner began to learn the psychological strategies and "game plans" that went into winning road races. Each runner had his own store of secrets that allowed him to gain an advantage over his opponent, but as strange as it may seem, he was never reticent when asked to list or explain any of his running secrets. The honour code, of which free information exchange may have been a part, played an important role in the running sub-culture.[13]

Road racing was open to and well within the physical capabilities of all members of the running sub-culture. Hardly any members have not set for themselves the goal of running in a 26-mile marathon, and given enough time, each member would no doubt attempt the feat. It was this tremendous room for improvement that differentiated running from all other sports. Each run or race could provide a new challenge and a new accomplishment. Few sports could match this constant flow of positive reinforcement.

Running as an Addiction Process

The primary hypothesis tested in the present study stemmed from Glasser's (1976) postulation that runners could become positively addicted to the running experience and consequently repeat the activity on a regular basis to attain the perceived effects.

Glasser felt that after a certain minimum time commitment to the activity (six months), running would constitute an addictive process in that it would provide the individual with a pleasurable release from those feelings associated with a low self-concept. Glasser considered this addiction to be positive because its effect was to allow the individual to control his mental states and in so doing, transform feelings of low self-worth into a more positive self-evaluation.

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[13] The Rosie Ruiz fiasco in the 1980 Boston Marathon may be signifying the breakdown of the honour code in road racing. Many runners were suspicious of her ignorance of interval training, but were appalled to find out that she had entered the race only a few miles from the finish line. The author has noted that this has become more prevalent in the last few years, especially in races where the course is laid out in a series of laps rather than in a straight line.

This study supported Glasser's postulation that runners became addicted to running, and apart from the special circumstances surrounding forced withdrawal from the activity, considered the addiction to be positive in its effects on the individual. In numerous conversations runners reported on new feelings of self-worth as a direct consequence of their involvement with running. Without exception, the interviewed runners agreed that the quality of their lives had been enhanced through the running experience. When asked if this involvement could be considered an addiction, 81 of the 104 individuals surveyed (78 percent) reported that they considered their running to be an addiction process. It was possible that the percentage would be even greater if it were not for the negative connotations that surrounded the term addiction.

If individuals are becoming addicted to the effects of running, this addiction should be reflected by a high commitment to the sport in much the same manner as an alcoholic is highly committed to the consumption of alcohol. To test this notion, Carmack and Martens (1979) developed the commitment to running scale utilized in the present study. Data obtained from the present sample group revealed that individuals scoring high on this scale evidenced a significantly higher involvement with the sport (greater average length of run) and experienced greater discomfort when a run was missed (see Table 1).

Even though many runners reported that they were addicted, the true test of an addictive process lay in the changes that occurred in an individual when he was forced to withdraw from its use. All addictions, whether positive or negative, produced dramatic changes in the individual when their effects were removed. The intensity of these changes may have suggested to some that the valence of the addiction itself had changed, but it was more likely that these dramatic changes reflected the strength of the addiction and not necessarily the valence. To accurately assess the valence of an addiction required that the researcher assess the long-term effects of the addiction and not concentrate solely on the aberrant effects that could accompany the withdrawal stage.

Bjerot (1972) suggested that addictions affect the individual in three areas; physically, psychologically and socially. The withdrawal of the addiction agent induced dramatic changes in each of these areas and in so doing gave some indication of the strength of the addiction process.

1. Physically - Normally the physical effects of running were positive. Individuals lost excess weight, firmed certain muscle groups and increased their cardiovascular efficiency. During the period of an injury, many of these effects became aberrant. As Morgan (1979) pointed out, many runners tended to downplay a physical injury and continued to run until a much more serious problem developed. D.J. continued to run with an inflamed achilles tendon until he developed chronic tendonitis. J.B. trained with mononucleosis until he was completely bedridden. G.K. attempted to run with a back problem until a doctor ordered complete cessation of activity. J.M. rode a stationary bicycle and fasted until

he dropped in weight from 133 pounds to 119 pounds. In each case the runner persisted in running or a makeup activity until the debilitating effects forced an almost complete break from any sort of activity.

2. Psychologically - Concurrent with the physical deterioration that often accompanied withdrawal, many individuals reported feelings of anxiety, depression and constant stress. D.J.'s comment that his life appeared to be falling apart or P.R.'s statement that "even the thought of incurring an injury sends a shiver down my spine," served to highlight the negative psychological effects that could occur from forced withdrawal. Obviously not all runners went through the serious debilitating injuries reported in this study or the damaging psychological effects that could accompany them, but the majority of runners were well aware of the restrictions imposed by an injury and went to great lengths to prevent or treat them.

In an attempt to gain insight into the treatment of injuries sustained by runners, the author interviewed a doctor and a physiotherapist.[14] Both agreed that treating an injured or seemingly injured runner was a unique clinical experience. They suggested that runners were highly skeptical of medical treatment and diagnosis, and yet persistently sought out this advice. This selective advice-seeking seemed to reflect, in their opinion, an almost neurotic obsession to find a way of treating the injury while continuing their regular workouts.

3. Socially - Even when healthy, many of the runners interviewed reported that they experienced social problems as a consequence of their

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[14] These informal interviews were conducted as a extension of participant observer research.

involvement with running. In most instances, the runners were tolerant of social interaction problems, the exception being when the difficulties were with a spouse or girlfriend. In those cases the problems became compounded when an injury or illness forced the runner to withdraw from the activity. D.J.'s comment regarding his own "crankiness" with his wife illustrated a pattern that could result from withdrawal. In most situations, however, the runner attributed interaction problems to feelings of jealousy or envy and in the face of such, felt somewhat smug or superior (Sheehan, 1978). It would have been unfair to overstate the interaction problems, but there was little doubt that the lifestyle changes that many runners went through did much to interrupt their previous friendships and social interaction patterns.

As mentioned previously, not all runners encountered a situation that forced a withdrawal from running nor was it the intention of this discussion to suggest that runners who had to stop running for a time would experience the aforementioned effects. It was clear, however, that certain individuals could become addicted to running and suffer severe withdrawal effects if they were forced to quit the activity (Greist, Klein, Eischens, and Faris, 1978).

Even for those who did not experience severe withdrawal symptoms, an injury did upset normal recreation patterns. For example, in most sport sub-cultures, an individual could at least watch fellow members participating in the activity from the sidelines, but an injured runner had no way of accompanying or watching his friends on their daily run. Since the sub-culture revolved around the run and its incumbent high levels of cardiovascular fitness, the individual felt set apart from the social interaction that occurred in the context of the run as well as the physical benefits of the run itself.[15]

In summary, it is important to point out that most runners were aware of the conditions that led to injuries and took the necessary precautions to avoid them. The dramatic withdrawal problems that some runners evidenced must be recognized as a reflection of the individual's perceived need for the effects of running and not in any inherent problems that accompanied the sport. The injuries reported were in most cases minor, and had they been treated properly by the runner himself no serious problems would have arisen. However, in each case where severe withdrawal symptoms arose, the individual expressed a high vested interest in the continuance of the sport. Without the daily run, these individuals believed that the positive rewards they had achieved from running would immediately disappear. J.M.'s workout on the stationary bicycle that eventually resulted in a 14-pound weight loss highlighted the determination to hold on to these positive effects. R.L. may have built (as his statements seemed to infer) an entire identity on his running prowess; had he lost the opportunity to run, it was possible that in his mind he would also lose that identity.

Glasser (1976) realized the investment these types of individuals had in running, and correctly labelled this involvement as an addiction. That its general long-term effects were positive there could be little doubt; however, there were individuals who could misuse these effects and for a time the addiction could have appeared negative. In support of this explanation, all of the runners interviewed who had sustained an injury admitted that it was their own fault when problems arose and not an inherent problem associated with running. They admitted that had they treated the injury properly or taken certain precautionary steps, there would have been no ill effects. As one gentleman said: "I've been running for 35 years and I've never had any problems."

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[15] Runners who had to stop running for a period of time typically reported a bloated or heavy feeling in the stomach. As mentioned previously, runners seemed to evidence negative feelings towards being overweight. Even the belief that they may have been gaining weight or losing fitness seemed to impel them into further aggravating their condition (e.g., dieting or alternate methods of conditioning).

Good Runs and the Altered States of Consciousness

At the core of the concept of positive addiction was an altered state of consciousness that Glasser (1976) called the positive addiction state (P.A. state). Analogous in many respects to Maslow's (1970) peak experience or Greely's (1974) ecstatic interlude, Glasser felt the P.A. state had to be achieved on a regular basis for the individual to become positively addicted.

Typified by a lowering of awareness of the activity itself and a heightened awareness of the mind's activities while under physical stress, the P.A. state allowed the mind to spiral upwards in philosophic thought until it "spun free." The "spinning free" of the mind allowed the individual to consider ideas in a new and different manner. The implication was that during this state the individual could re-evaluate the forces central to his life and come to a new awareness of his life's direction. Glasser suggested this experience was intensely enjoyable to the individual, not because of the physical manifestations of the activity, but because of the mental states the runner was experiencing.

Supposedly the awareness one normally had of the physical sensations and environment dropped away and the individual became totally pre-occupied with one's own mental states.

In order to evaluate this concept it was necessary to ensure that Glasser's (1976:93) pre-conditions had been met. It then became possible to evaluate the notion of the P.A. state in light of data gathered in the present study.

> Pre-condition 1: "Whatever activity the individual becomes involved with it requires approximately one hour per day. This time may later become sacrosanct, in that, the individual insists on setting this time period aside for his activity."

The runners surveyed in the present study ran between four and five miles per day, which amounted to at least one hour of their time each session. Runners who were interviewed averaged approximately ten miles per day which encompassed at least two hours of their time each session. With this degree of time commitment the runners should have evidenced a degree of obsession with a particular time in which they normally ran. Such was not the case. The runners observed and interviewed by the author were quite comfortable with adjusting the time of their run to suit the dictates of their job or the wishes of their running companions. However, once a time had been agreed upon for the run, many individuals were quite adamant in terms of dropping everything and going on the run.

> Pre-condition 2: "The activity will typically pose some discomfort to the individual in the beginning, but he persists on the conviction that it is helping him in some manner."

This pre-condition was reflected in the present study. Beginning runners typically experienced discomfort from running in the form of blisters, sore muscles, side aches and chest pains from deep and rapid breathing. However, they persisted on the belief that running was improving their cardiovascular efficiency as well as adding to their personal appearance via weight loss and muscle tone.

> Pre-condition 3: "A great deal of personal initiative is required to continue the activity until one becomes positively addicted."

Glasser suggested this required at least six months, after which time the individual had been sufficiently trained to allow his mind to spin free.

Data obtained from the present study suggested that addiction was not governed by a particular time frame. Many runners reported that they were addicted almost immediately while others stated that the process required many years. The research by Greist, Klein, Eischens, and Faris (1978) corroborated this finding by citing the case of a 28 year old woman who suffered withdrawal symptoms only weeks after becoming involved in running. Evidently the perceived effect of running was the critical factor in establishing an addiction process and not a certain time frame related to use.

> Pre-condition 4: For the addiction to become fixed, the individual must strive for improvement without becoming self-critical. This allows him to reach the P.A. state often enough for the process to have an influence over him.

Glasser's postulation of an altered state of consciousness predominated by a mind preoccupied with its own awareness was precicated on the assumption that runners could, while running, achieve a stage where they no longer needed to monitor their performance. This assumption could not be verified within the context of the present study. On the contrary, runners at every stage of development reported a continuous concern with such aspects of running as proper breathing, proper running form, bodily adaptation to stress, impending injury and to some degree, the topography of the course. Advanced runners evidenced an even greater concern with these factors putting further strain on Glasser's (1976) assumption that improvement was accompanied by a lessening of the monitoring of performance.

The graph in Figure 9 highlighted this discussion by revealing that runners do not vary significantly on the factor spin out throughout the course of the run. Since Carmack and Martens (1979) interpreted the spin out factor as reflective of the P.A. state, it would seem that runners in this study did not typically experience an altered state of consciousness during their runs.

Interviewed runners reported that they did experience good runs on a frequent basis but noted that the runs were enjoyable throughout and not characterized by the intense and fleeting emotions of the peak experience. It was important to note that during their good runs, they were actively aware of their physical performance and became preoccupied with attending to it rather than allowing the mind to spin free of the activity itself.

Recapturing these good runs was not a primary goal of either the runners observed or interviewed, suggesting that the long-term effects of running were divorced to a degree from the seeking of pleasurable highs during the run. Individual runners commented that even if they had wanted to recapture the good feelings associated with a previous run, it would have proven a futile task since each run had its own unique character that was determined and perceived only after the run was in progress. This in itself presented a certain degree of satisfaction to most runners who seemed to feel that one should go with the flow of the run and not try to superimpose certain conditions upon it.

Many of the runners the author contacted felt that the "runners high" (peak experience) was a creation of the media in response to overly zealous beginning runners. Certain of the interviewed runners felt that something like a runners high could possibly result from running well below one's potential (50-60 percent) and doing so in beautiful natural surroundings. In other words, they felt that if a person was in a proper frame of mind to begin with (happy) and decided to go on a slow run through beautiful scenery, it was conceivable that something like a runners high might occur. Most runners seemed to dismiss this situation, however, by stating that they rarely enjoyed going that slow and if they felt like enjoying scenery, the would rather go for a walk. The predominant attitude seemed to be that running was an occurrence unto itself and only a novice would attempt to combine the experience of the run with diversionary activity.[16]

Other interviewees suggested that runners high was nothing more than a novice runner reaching a stage where he was no long running in pain and discomfort. The personal satisfaction that accompanied this achievement of cadence[17] was a very real turning point in the runner's performance and no doubt could elevate his feelings to something approaching a high.

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[16] G.K. and R.L. pointed out that running with headphones and attending to the scenery were similar in that both were diversion activities and evidence of "someone who doesn't know what running is all about."

[17] T.O. explained to the author that cadence referred to a runner's ability to keep the upper body erect and loose, maintain a long, smooth stride and learn how to breathe in rhythm with the motion of the body.

The internal changes accompanying this transaction could do a lot in terms of accentuating these feelings but since no biochemical data was forthcoming in the present study, speculation would have been tenuous at best.

Finally, there was the definite possibility that a placebo effect may have occurred, in that runners unfamiliar with any pleasurable sensations that occurred in the context of the run may have misinterpreted these signals as the runners high (Schacter, 1964).

> Pre-condition 5: Glasser stressed that "competition tends to make one critical of his performance thereby hindering any chance of reaching the P.A. state." As a consequence he suggested: "Whatever the activity one is involved in it must lend itself to singular involvement if one hopes to achieve the P.A. state."

It was clear that competition could make one critical of his performance, especially if that performance did not meet pre-conceived expectations, but it seemed unrealistic to propose that on that basis competition should be removed from the activity. This was especially true of an activity such as running where the sub-culture was designed to allow individuals to run and compete with others of similar ability. This was not to suggest that all runners ran in groups, but even the singular runner, at some stage, sought out others as a gauge of his own improvement and performance.

The progression that Glasser (1976) alluded to in this pre-condition had no substantial bearing on the running sub-culture in so much as 78 percent of the runners in the present survey reported that they were addicted to running without ever achieving the P.A. state or foregoing any form of competition.

Competition for the more experienced runner did not appear to reduce his pleasure with running nor did it reduce his perceived commitment to running. On the contrary, many runners (as evidenced in the interviews) reported this as their prime motive for continuing running. Even for the less-experienced runner, this competition (formal or informal) appeared to be necessary to provide him with the feedback necessary for attainment of the goals he had set for himself.

It appeared that addiction to running was not predicated on frequent encounters with a peak experience, mystical interlude or a P.A. state but rather on a complex interplay of factors related to: (1) social integration into a sub-culture that existed to provide positive reinforcement to members striving to improve their physical performance, (2) psychological benefits attained by regularly realizing goals related to physical performance, and (3) an enhanced self-concept based on his perception of improved physical performance.

The interplay of these variables allowed the individual to redefine himself and in some cases provided the basis upon which he sought to project this new definition of himself.

Verification of the Proposed Model

The purpose of the proposed model was to provide some clarification of the interplay between certain variables which resulted when an individual perceived himself moving from boring activities to activities of higher enjoyment. No attempt was made to delineate the motivating factors that led individuals toward certain activities, as these were highly individualistic and varied tremendously from person to person. There was, however, some commonality in the pattern that individuals exhibited as they became involved in enjoyable activities. This pattern was the major concern of Csikszentmihalyi's (1975) original research in the area of sport and play. He felt that once this pattern or interplay of certain variables was understood, it could be transferred to the work environment and provide a degree of relief from work's more mundane aspects.

The unique aspect of the present model was that it attempted to delineate the interplay of variables that led to the state of flow as well as the subsequent interaction that would lead to the peak experience or P.A. state. This continuum was predicated on the assumption that the variables which served to provide individuals with enjoyable situations were the same variables that led to the peak experience.

Evidence from the participant observation and depth interview phases of the study failed to verify the proposed model as it was structured for the current study. Individuals involved in the running experience did reach a state where the monitoring of the performance and the monitoring of their own awareness reportedly merged, but they did not report a stage of involvement wherein the monitoring of the performance decreased concurrent with an increase in the monitoring of their own awareness.

On the continuum presented by the model, runners typically described themselves at the stage that Csikszentmihalyi (1975) referred to as "flow." That is, their involvement with the activity and their awareness of that involvement merged so that they became totally preoccupied with the run. To that point, the model was verifiable. Runners did report a gradual increase in their involvement concurrent with a lessening of awareness of variables extraneous to their activity.

This was evidenced by the run itself. During the initial phase, the group conversed at length on pertinent topics such as weather and immediate environment. As the run progressed, they became less concerned with the discussion and began to focus their attention on the run itself. Their dichotomous awareness of both performance and monitoring began to lessen until the function of the self was primarily concerned with monitoring only the physiological responses of the body to the run and those environmental factors that may have impinged on it. Reportedly, this monitoring of the performance never dropped away to an appreciable degree; however, it was subject to variation depending on the runner's skill and ability (training and genetic potential). A situation was never discussed while the author was a participant observer or in the context of the depth interviews which would indicate that runners typically allowed their monitoring of performance to drop completely away. Even on their best runs, they reported an awareness of environment and performance that ensured both their safety and continued high performance.

The peak experience replete with euphoric introspection was not reported or observed in this study. It is speculated that the factors necessary to its inception were not usually present in the context of the run. The seemingly natural inclination of the runner to constantly monitor his environment and performance obviated any chance for his mind to spin free. Perhaps an activity would have to be one that allowed mindless repetition of a certain muscular action without attention to changing variables within the environment. This may produce a low level hypnosis capable of precipitating an altered state of consciousness; however, as Greely (1974) and Maslow (1970) pointed out, no particular chain of events could guarantee a peak experience. It seemed unlikely that repetitive exercise with little or no challenge attached could trigger something as enjoyable as a peak experience but until further research has been done on triggers of the peak experience, any speculation is tenuous.

If the peak experience does occur in sport or play, the factors that lead to that occurrence were beyond the verification of the present study. The data obtained lent support for the structure of the model up to the state of flow, but failed to shed any light on the sequence of events that may lead to the peak experience or P.A. state.

Chapter 5

SUMMARY, IMPLICATIONS AND RECOMMENDATIONS

There has been a great deal of speculation and conjecture in regard to the notion that runners can become addicted to running (Fixx, 1976; Glasser, 1976, Sheehan, 1978). Glasser postulated that not only was this addiction a positive force in the individual's lifestyle, but that these positive effects allowed the individual to redefine his very existence. The interim step between the activity of running and the positive psychological alterations was presumed to be an altered state of consciousness that Glasser referred to as the positive addiction (P.A.) state. Conceived as analogous to Maslow's (1970) peak experience, the P.A. state was considered to be the very core of positive addiction in that the individual must reach this elevated state of consciousness on a regular basis before he or she can be considered a positive addict. Glasser's assumption that running was an activity that could lead its adherents into a process of positive addiction formed the basis for the present study. The primary questions that arose from this assumption were: Can running become an addictive agent? If so, was the P.A. state the essential ingredient to this addiction or did other factors influence the addiction process?

A secondary consideration in the study was to attempt to delineate the stages of involvement that led an addicted runner to the peak experience (Maslow, 1970), P.A. state (Glasser, 1976), or mystical interlude (Greely, 1974). Some work in this area had previously been attempted by Csikszentmihalyi (1974) but it was felt the initial investigations needed expansion if the stages to the P.A. state were to be delineated. This aspect was considered an extension of the primary hypothesis in that Glasser (1976) had suggested that the addicted runner, by definition, had frequent encounters with the P.A. state or peak experience. The major findings relative to these questions are summarized as follows:

1. The notion that runners become addicted to running was substantiated in the present study. The perceived outcomes of running for the more heavily committed runner suggested that the intensity of a runner's addiction was a reflection of the perceived therapeutic value of the running experience. As a long-term effect, individuals perceived that running helped them to establish a more positive self-concept which in turn fostered the development of a new identity (Sheehan, 1978). On a short-term basis, running was seen by many individuals as a treatment for the anxiety and depression that could accompany the stress of everyday living. It could not, however, be determined in the context of this study if the psychological alterations to these and other stressful psychological processes led to a permanent personality shift along an extroversion-introversion continuum.

2. The basis for these positive psychological changes acquired through running were reported by the respondents as being inextricably linked to perceived improvements in physical performance and appearance. It was difficult to ascertain whether these improvements in self-concept were based on real or imagined physical changes; however, since the individual's perception was the overriding assessment, no attempt was made to answer this question.

Most runners felt that their whole lifestyles were undergoing a change as a direct consequence of increased cardiovascular efficiency, weight control and muscle tone and definition. This change was evidenced in renewed vigour and confidence for the other avenues of the individual's lifestyle. There was room for speculation that individuals who perceived the greatest relative improvement in performance and subsequent lifestyle tended to accredit more to the running experience and so perceived themselves as more addicted.

3. Glasser's notion of the role of the P.A. state in determining addiction could not be corroborated in the present study. The paradox of runners perceiving themselves as addicted to running and not having experienced the P.A. state forced alternate explanations as to the source of their addiction. A further need for an alternate explanation of addiction stemmed from the fact that more heavily committed runners reported a more intense awareness of their performance during the run, a situation that ran counter to Glasser's (1976) expectations.

As previously mentioned, the mitigating factor that appeared to involve runners in an addiction process was the perceived therapeutic effect that running had on the individual's self-concept (Peele, 1978) and not an altered state of consciousness characterized by a mind primarily attuned to its own awareness.

Even recapturing the good feelings associated with a previous enjoyable run was not perceived by runners as a motivating force behind their running behaviour. Typically, runners were content to let each run develop its own character and rely on the long-term effects of running for their motivation.

4. Since runners failed to report encounters with the peak

experience or P.A. state, it was impossible to verify the proposed model beyond the state of flow (Csikszentmihalyi, 1975). This stage of merging awareness and activity involvement was consistently reported by runners as the hallmark of the good run rather than the altered state of consciousness that would typify the peak experience or P.A. state.

5. The running sub-culture was observed as being typical of many sport sub-cultures in respect to the development of argot, beliefs, symbols, attitudes and norms for behaviour. It was atypical in its development of small groups of individuals who interacted with other runners on a limited basis. This limited interaction was perceived as a reflection of the specific needs of each individual as well as the fact that running required no prescribed location for participation. The binding force that united the sub-culture was a preoccupation with the run itself and the subsequent high level of physical fitness. This provided the members with a superior attitude toward the larger, more sedentary society and probably accounted for the in-group feelings the sub-culture fostered. As a consequence of these powerful in-group feelings, runners tended to limit their social interaction to other runners. This should not be interpreted as reclusive behaviour; on the contrary runners reported that they became better adapted to the handling of social interaction pressures as a result of their running. There was some evidence that the more highly committed runners took leading roles in the sub-culture and as such, were primarily responsible for disseminating information and organizing events (marathons, clinics and so forth).

The study can be viewed as successful in that evidence gathered supported the central hypothesis that runners became positively addicted to running; however, no evidence supported the postulation that this addiction was based on the P.A. state. Verification of the model was only partly successful because of the lack of information relative to altered states of consciousness. The implications of the study for runners, members of other sports, and society at large will be discussed in the following section.

Implications

This study can be viewed as an attempt to verify and extend the theory that individuals can become positively addicted to a physical activity (Carmack and Martens, 1979; Glasser, 1976; Sachs and Pargman, 1979; Sheehan, 1978). Extending the theory of positive addiction was attempted in the following manner.

Firstly, the study incorporated a triangulation of methodologies that allowed the author the widest possible perspective of the runner's world. It also allowed the author to profile various levels of runners in the context of their sub-culture and subsequently evaluate the extent and intensity of their addiction.

Secondly, the study undertook to investigate the underlying causes and dimensions of addiction in physical activity rather than simply ascertaining if an addiction process was in place.

It is speculated that the addiction process evidenced in the running sub-culture could develop in other sports providing that sport could positively alter the individual's perception of his or her physical and psychological attributes. Traditional team sports may not have this capability in that an individual's self-perception is contingent upon extraneous factors that may or may not be under one's control. Basketball players, for example, may not evidence this type of addiction process because self-evaluation is tied to the performance of the team. Consequently, levels of personal improvement cannot be easily measured outside the context of the game. Weightlifting, on the other hand, may be an activity where an addiction process could occur because of the fact that the physical manifestations are observable and highly valued in our society. The ensuing positive psychological benefits (status, confidence) are proportional to the increase in physical performance and hence capable of involving the individual in an addiction process. Also, it is not limited by the fact that one needs other individuals to engage in the activity.

The tremendous popularity that running has achieved in our society may signal the onset of further changes in how society will perceive physical activity in the future. Many of the runners in the present study held important positions in the community and no doubt were in the process of influencing their primary reference groups both by example and verbal encouragement, as to the worth of activity. The increasing alienation of many individuals from the society in which they live could prove to be a primary motivating force in terms of drawing these individuals toward physical activity as a way of coping with this alienation.

On the negative side, the possibility exists that running will become more oriented towards materialistic rewards. There are already instances of prize monies being offered as incentives to attract the top names in marathon racing. Many runners are dismayed at the prospect of professionalism creeping into racing and envisage a complete breakdown of the honour code which now exists in the sub-culture. Others felt that turning running into a professional sport would necessitate incorporating a rules structure to handle cases of people shoving, tripping or improperly seeding themselves at the start, so as to gain an edge over other competitors. Admittance charges, stands for spectators, betting procedures, drug taking as well as a host of publicity gimmicks and advertising campaigns would probably accompany any possible transition from recreation to professional sport. Consequences of these changes would no doubt filter downward through the sub-culture, changing the novice runner's perception of both the uses and goals of long distance running.

The results of this study also suggest a re-evaluation of the rôle that sport and physical activity has for many individuals in our society. Obviously potentially addicting sports or physical activity have the capability of convincing the individual that he or she can further isolate oneself from society without any serious repercussions. The alienation that is predominant in our society could only increase as such singular pursuits become more popular.

In certain cases, however, it is speculated that potentially addictive activity can serve in a beneficial rôle as a method of relieving certain negative psychological processes (anxiety, depression and general neuroses) that accompany a highly technocratic society. It is suggested that the use of sport in this context be accompanied by counselling so that individuals do not become solely dependent on the effects of the activity to the exclusion of other avenues of fulfillment.

Finally, the results of this study can provide a basis for speculation on the future role of running in our society. It is postulated that the positive effects of running will be sought out by ever-increasing numbers of individuals who feel a need to re-evaluate the course and definition of their lives. As the number and quality of members increases, so too will the goals and levels of aspiration. The ultra marathons of today will become commonplace tomorrow further adding to the mystique of long-distance running and its incumbent heroes. However, it will no doubt enjoy this future only under the restraints imposed by the establishment of an elite, highly paid, professional class of runners who will dictate both the direction and ultimate goals of the running sub-culture.

Recommendations

1. It is recommended that a study be undertaken to investigate the involvement of women in the sport of running. Some speculation has been made (Carmack and Martens, 1979) that women evidence a higher commitment to the running experience than men. Investigations into this area would also serve to shed more light on the process of addiction as it occurs in sport.

2. As running moves from a recreational activity toward professional or semi-professional sport, the influences the average runner feels will be considerable. Investigations are necessary to delineate how this affects not only the running sub-culture but also the runner's perception of his or her addiction and commitment to running.

3. Further investigations into the peak experience should be undertaken especially in the context of activities such as running.

It is possible that the present study through imperfections in sampling was unable to detect its occurrence in the sport of running.

4. The need exists for other disciplines to investigate parameters of the running experience. If psychological re-evaluation of the individual's lifestyle is somehow influenced by internal opiates or a shift in brain hemisphere functioning, this information would be invaluable in understanding the long-term effects of such sports as running.

5. Similar studies should be undertaken in other sports to determine if the addiction process plays a major role in determining its value and use. This information could prove extremely useful in determining the diverse nature of sport in modern society.

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APPENDICES

APPENDIX A

Covering Letter for Mailed Questionnaire

DEPARTMENT OF PHYSICAL EDUCATION
FACULTY OF PHYSICAL EDUCATION AND RECREATION

December 5, 1979

Dear Fellow Chasquis Member:

As a dedicated runner myself, I have noted that running has had some profound changes on my lifestyle. As a consequence, I have become involved in a research project at The University of Alberta designed to shed light on some of the changes that have occurred in people's lives as a result of running. To assist in this research I have contacted Peter Parker and requested permission to send the enclosed questionnaire to fellow members of the Chasquis Running Club. All responses are strictly confidential and the results of the study are available to you at its completion (hopefully the summer of 1980).

I realize this is a bad time of year; Christmas rush and all, but I do hope you will find the time to help me out.

Thank you so much.

Sincerely,

LJ:jlb
Encls.

Larry Jacobs
(Chasquis Member)

P.S. Enclosed is the questionnaire and a stamped, self-addressed envelope for its return.

THE UNIVERSITY OF ALBERTA, EDMONTON, CANADA T6G 2H9

APPENDIX B

Mailed Questionnaire

RUNNERS' ATTITUDE QUESTIONNAIRE

This is a survey about running. It is being conducted by The University of Alberta to gather information concerning the reasons why people run, how they feel about running, and what outcomes they derive from running.

This questionnaire will require approximately 15-20 minutes of your time. Although some questions may appear to be repetitious, please answer all items as best you can and as you honestly feel - all responses will remain anonymous and confidential. There will be space at the end of the qeuestionnaire for you to write any additional comments.

We appreciate your time and cooperation, and we will be pleased to share the results of this study with you. If you wish to receive a copy of the results of this study, send a stamped, self-addressed envelope to: Larry Jacobs, Faculty of Physical Education, The University of Alberta, Edmonton, Alberta.

PART ONE — GENERAL INFORMATION

Age ________ Sex: Male ☐ Female ☐ Occupation ____________________

Height ________ Weight ________ Present marital status: Married ☐ Single ☐ # of children ________

If you are a student, what is your major curriculum? ____________________

Education (circle the highest year completed in school):

Elementary	1	2	3	4	5	6	7	8
High School	1	2	3	4				
College	1	2	3	4	5	6	7	8

Do you currently play any other sport(s) in addition to running? Yes ☐ No ☐ If so, list the sport(s) and the number of hours you play each sport per week (in season):

PART TWO — RUNNING INFORMATION

1. At what age did you first begin running regularly (at least 3 times per week)? ________ years of age

2. What is the *total* length of time throughout your life that you have been a regular runner (at least 3 times per week)? Do not count non-running periods. ________ years, ________ months

3. What is the average length of your run?

   A. Over the last 12 months: ________ minutes ____________ estimated distance

   B. Over the last 2 months: ________ minutes ____________ estimated distance

4. On the average, how many days do you run each week? (Circle one)

   1 2 3 4 5 6 7

5. During the last 6 months, how many times have you *not run* on days when you originally planned to run?

   ________ times

6. What is the main reason(s) that you missed these runs?

7. Are you uncomfortable when you miss a run? Yes ☐ No ☐ If so, in what way?

How many months had you been running before you experienced this discomfort? ________ months

8. On the average, now often do you run with one or more other people each week? (Circle one)

0 1 2 3 4 5 6 7

9. Would you still run if you had to run alone? Yes ☐ No ☐

10. Where do you do your running? (Indicate percentages if more than one of the following)

________ Streets ________ Rural Roads ________ Grass ________ Track ________ Sidewalks

________ Other (describe) ________________________________

11. When do you run? (Indicate percentages if more than one of the following)

________ Early morning ________ Late morning ________ Mid-day ________ Early afternoon

________ Late afternoon ________ Evening

12. Do you compete in races? Yes ☐ No ☐

If so, on the average, how often do you compete each year? ________ times per year

13. Would you still run if you could not compete? Yes ☐ No ☐

14. Do you belong to a track club? Yes ☐ No ☐

If so, how long have you belonged to a club? ________ years

15. Do you plan to continue running indefinitely? Yes ☐ Uncertain ☐ No ☐

16. Have you had any formal coaching in running? Yes ☐ No ☐ If yes, indicate type (for example, high school, college, club) and length of time: ________________________________

17. List the 3 most important reasons why you *began* running (not necessarily the reasons why you presently run), in order of importance:

1.

2.

3.

18. List the 3 most important reasons why you *presently* run, in order of importance:

1.

2.

3.

19. Would you describe your running as an "addiction"? Very much ☐ Somewhat ☐ Not at all ☐

If so, how long did you run before becoming "addicted"? ________________________________

PART THREE — STATE OF MIND

The following statements may or may not describe your *state of mind during a run.* Read each item and then indicate whether you experience that state of mind *almost never (0), sometimes (1), or almost always (2).* Please make a response for each of the four segments into which the run has been divided.

EXAMPLE:

	FIRST 1/4	SECOND 1/4	THIRD 1/4	LAST 1/4
"I feel good about myself."	0	1	2	2

This answer would indicate that you "feel good about yourself" almost never during the first quarter of your run, sometimes during the second quarter, and almost always during the third and fourth quarters of your run.

CODE: ALMOST NEVER = 0 SOMETIMES = 1 ALMOST ALWAYS = 2

Please make your response in reference to a run which is an average length for you (not a race).		FIRST 1/4	SECOND 1/4	THIRD 1/4	LAST 1/4
1. "I just let my mind go. I am not completely aware of my surroundings."	1.	___	___	___	___
2. "My mind seems to spin free. It is there, but not there."	2.	___	___	___	___
3. "I seem to float."	3.	___	___	___	___
4. "I have a sense of confidence, of well-being."	4.	___	___	___	___
5. "I have a feeling of euphoria, almost real happiness."	5.	___	___	___	___
6. "I am bored."	6.	___	___	___	___
7. "I consciously try to solve a problem or figure out something."	7.	___	___	___	___
8. "I feel depressed."	8.	___	___	___	___
9. "I have a sudden flash of insight when I least expect it."	9.	___	___	___	___
10. "I just kick my mind out of gear."	10.	___	___	___	___
11. "I feel heavy and tired."	11.	___	___	___	___
12. "My mood and morale lift."	12.	___	___	___	___
13. "I feel optimistic."	13.	___	___	___	___
14. "I am relaxed and tranquil."	14.	___	___	___	___
15. "I feel grumpy, irritable, and impatient."	15.	___	___	___	___
16. "I feel friendly."	16.	___	___	___	___
17. "I am angry."	17.	___	___	___	___
18. "My mind is detached and dreamy."	18.	___	___	___	___
19. "I am uptight."	19.	___	___	___	___
20. "My thoughts are unpleasant."	20.	___	___	___	___
21. "I am energetic and enthusiastic."	21.	___	___	___	___
22. "My worries fade away."	22.	___	___	___	___

PART FOUR — FEELINGS ABOUT RUNNING

The following statements may or may not describe your feelings about running. Read each statement and then circle the appropriate number to indicate how well the statement describes *your feelings most of the time.*

There are no right or wrong answers. Do not spend too much time on any one item, but give the answer which seems to describe how you *generally feel* about running.

	STRONGLY DISAGREE	DISAGREE	UNCERTAIN	AGREE	STRONGLY AGREE
1. I look forward to running.	1	2	3	4	5
2. I wish there were a more enjoyable way to stay fit.	1	2	3	4	5
3. Running is drudgery.	1	2	3	4	5
4. I do not enjoy running.	1	2	3	4	5
5. Running is vitally important to me.	1	2	3	4	5
6. Life is so much richer as a result of running.	1	2	3	4	5
7. Running is pleasant.	1	2	3	4	5
8. I dread the thought of running.	1	2	3	4	5
9. I would arrange or change my schedule to meet the need to run.	1	2	3	4	5
10. I have to force myself to run.	1	2	3	4	5
11. To miss a day's run is sheer relief.	1	2	3	4	5
12. Running is the high point of my day.	1	2	3	4	5

PART FIVE — OUTCOMES

This is a list of miscellaneous benefits or outcomes which people sometimes attribute to running. Read each item and then check whether you feel that you have derived that outcome from running. If you check "Yes," then indicate the importance of this outcome as a reason for *why* you run.

OUTCOME	HAVE YOU DERIVED THIS OUTCOME FROM YOUR RUNNING?		IF SO, IS THIS A REASON FOR WHY YOU RUN?		
	NO	YES	VERY LITTLE	SOMEWHAT	VERY MUCH
1. Cardiovascular endurance	☐	☐	☐	☐	☐
2. Weight loss	☐	☐	☐	☐	☐
3. Weight control	☐	☐	☐	☐	☐
4. Mental alertness	☐	☐	☐	☐	☐
5. Reduce anxiety	☐	☐	☐	☐	☐
6. Relief of tension	☐	☐	☐	☐	☐
7. General increase in energy	☐	☐	☐	☐	☐
8. Improve ability to sleep	☐	☐	☐	☐	☐
9. Improve appearance	☐	☐	☐	☐	☐
10. Feel better	☐	☐	☐	☐	☐
11. Increase self-confidence	☐	☐	☐	☐	☐
12. Reduce depression	☐	☐	☐	☐	☐
13. Sense of independence	☐	☐	☐	☐	☐
14. Self-respect	☐	☐	☐	☐	☐
15. Less irritable	☐	☐	☐	☐	☐

OUTCOMES OF RUNNING, CONTINUED

OUTCOME	HAVE YOU DERIVED THIS OUTCOME FROM YOUR RUNNING?		IF SO, IS THIS A REASON FOR WHY YOU RUN?		
	NO	YES	VERY LITTLE	SOMEWHAT	VERY MUCH
16. Improve mood	☐	☐	☐	☐	☐
17. Better emotional stability	☐	☐	☐	☐	☐
18. Improve creativity	☐	☐	☐	☐	☐
19. More productive at work	☐	☐	☐	☐	☐
20. Fellowship with other runners	☐	☐	☐	☐	☐
21. Opportunity for competition	☐	☐	☐	☐	☐
22. Success in competition	☐	☐	☐	☐	☐
23. Provides time alone	☐	☐	☐	☐	☐
24. Relief of boredom	☐	☐	☐	☐	☐
25. Greater appreciation of food	☐	☐	☐	☐	☐
26. Enjoyment of nature	☐	☐	☐	☐	☐
27. Conditioning for other sports	☐	☐	☐	☐	☐
28. Provides time for meditation	☐	☐	☐	☐	☐
29. Maintain youthfulness	☐	☐	☐	☐	☐
30. Provide a challenge	☐	☐	☐	☐	☐
31. Sense of identity	☐	☐	☐	☐	☐
32. Closeness to God	☐	☐	☐	☐	☐
33. Escape from work	☐	☐	☐	☐	☐
34. Improve figure	☐	☐	☐	☐	☐
35. Other ____________	☐	☐	☐	☐	☐
36. Other ____________	☐	☐	☐	☐	☐
37. Other ____________	☐	☐	☐	☐	☐

If any of the following does not apply to you, check the box marked "DOES NOT APPLY"

	DOES NOT APPLY	NO	YES	VERY LITTLE	SOMEWHAT	VERY MUCH
38. Rehabilitation from a heart attack	☐	☐	☐	☐	☐	☐
39. Reduce high blood pressure	☐	☐	☐	☐	☐	☐
40. Stop smoking	☐	☐	☐	☐	☐	☐
41. Improve asthmatic condition	☐	☐	☐	☐	☐	☐
42. Rehabilitate an injury	☐	☐	☐	☐	☐	☐
43. Control drinking	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐

DID YOU ENJOY FILLING OUT THIS QUESTIONNAIRE?

NOT AT ALL	VERY LITTLE	SOMEWHAT	VERY MUCH
☐	☐	☐	☐

PLEASE USE THIS SPACE TO WRITE ANY ADDITIONAL COMMENTS:

APPENDIX C

Depth Interview Format

Depth Interview Format

1. What is your age?
2. What is your occupation?
3. How long have you been running?
4. Why did you start running?
5. Why do you continue to run?
6. How far each time and how frequently do you run?
7. What time during the day do you usually run and is there any particular reason for this time slot?
8. Do you have good and bad runs and if so, describe what differentiates them.
9. Do you consciously try to recapture the feelings associated with a previous good run?
10. Describe the role (if any) that competition plays in your running.
11. How do family, friends and workmates feel about your running?
12. Discuss the pattern of your running involvement, especially in reference to how the mileage increased.
13. Have you ever been forced to, or attempted to give up running? What were your feelings?
14. Has running influenced the quality of your life? How?
15. Do you perceive anything negative about running?
16. Are you addicted to running?